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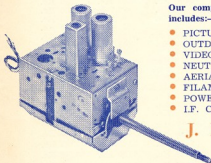
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2990 Kc.	5750 Kc.	6425 Kc.	7002.5 Kc.	7350 Kc.
3280 Kc.	5775 Kc.	6450 Kc.	7025 Kc.	7375 Kc.
3500 Kc.	5825 Kc.	6475 Kc.	7005 Kc.	7400 Kc.
3533 Kc.	5850 Kc.	6497.5 Kc.	7010 Kc.	7425 Kc.
3535 Kc.	5852.5 Kc.	6500 Kc.	7011.75 Kc.	7450 Kc.
3537 Kc.	5875 Kc.	6525 Kc.	7012 Kc.	7475 Kc.
3892 Kc.	5900 Kc.	6525 Kc.	7018 Kc.	7500 Kc.
3925 Kc.	5925 Kc.	6547.5 Kc.	7021.7 Kc.	7525 Kc.
4096 Kc.	5950 Kc.	6550 Kc.	7025 Kc.	7550 Kc.
4172 Kc.	5975 Kc.	6561.111 Kc.	7032 Kc.	7575 Kc.
4205 Kc.	6000 Kc.	6575 Kc.	7032.6 Kc.	7600 Kc.
4205 Kc.	6025 Kc.	6600 Kc.	7050 Kc.	7625 Kc.
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MSS. and Magazine Correspondence should be forwarded to the Editor, "Amateur Radio," C.O.R. House, 191 Queen Street, Melbourne, C.I. on or before the 8th of each month.

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EDITORIAL



LEARNING

"Cease not to learn until thou cease to live;
Think that day lost wherein thou draw'st no letter
To make thyself more learned, wiser, better."

—Guy de Faur Pibrac.

When at the outset of his career, the newly licensed Amateur constructs his first transmitter, it often happens that he comes in contact with problems of a new genius. The lecturers and books have explained the theory but these difficulties are of a different ilk.

However, with the enthusiasm that is his, and possibly the help of the fellow in the next street, all is finally resolved and his equipment "works." With the progress of time, improvements in construction, design, and technique finally produce the efficient modern rig and the old newcomer proudly displays his success. He has mastered his problems.

But has he? Every second that passes brings a new thought, circuit, or method. Unless he is willing to use the very latest he is failing to keep up with the subject his hobby is dependent upon.

The Amateur of today cannot be expected to compete with the research laboratories of vast combines, but he can familiarise himself with their findings by applying in a practical manner the ideas which they so liberally dispense.

This is his part. Not only must he keep abreast with developments by reading about them—he must, in his own modest way, try them out; judging for himself whether they are of value to that world of communications where he represents the Amateur service.

And where must this testing take place? On the Amateur bands. Let's hear those call signs testing out some new antenna, some keying method or type of modulation. DX may paralyse the receiver or may be not; but the joy of learning is worth the effort.

What experiment did you say you were going to try next?

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Single Sideband: Is It Better Than Amplitude Modulation?*

BY J. P. COSTAS, W2CRR

A WORD OF WARNING

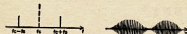
● Before going any further it is only fair to warn the reader of the intent of this article. What I shall attempt to show is that a.m. as a basic modulation process is every bit as good as single sideband. Furthermore, the performance advantages claimed for s.s.b. come about not due to any fundamental fault of a.m., but rather due to the faulty use we are making of this modulation process. Assuming that there are still a few readers left we shall continue.

WHAT IS A.M.?

This question on the surface may seem to be a very simple one to answer but there are some points involved which are not too obvious. For example, if we have a modulating frequency f_m and a carrier frequency f_c , conventional a.m. may be represented as shown in Fig. 1 (a) by a carrier and a pair of sidebands each of half the carrier amplitude. Now as is well known, the carrier wave conveys no intelligence and its removal from the a.m. signal would not affect the information bearing components or sidebands. Thus if we remove the carrier from the conventional a.m. signal of Fig. 1 (a) we shall have the suppressed carrier, double-sideband a.m. signal of Fig. 1 (b). Note that the sideband (intelligence) powers in (a) and (b) are the same but that the total signal power in (b) is considerably less than in (a).



(a) This is AM as we now know it.



(b) This is AM as it should be.

Fig. 1. Two Types of AM Signals.

Although the signal shown in 1 (b) does not look like an a.m. signal it is simply a conventional a.m. signal with the carrier removed. As we shall see the carrier component of an a.m. signal need not and should not be transmitted. Once we realize that the carrier component of an a.m. signal is not basic to the modulation process, it becomes clear that the signal of Fig. 1 (b) represents "amplitude modulation" just as much as that of Fig. 1 (a) and that

1 (b) represents the more efficient way of getting the message across.

Questions immediately arise as to how we are to generate and receive double sideband suppressed carrier (d.s.b.) a.m. signals and some of the possibilities will be discussed later in this article.

9 DB. S.S.B. POWER ADVANTAGE—IT DOES NOT REALLY EXIST

We are now in a position to examine the signal-to-noise properties of a d.s.b. a.m. system as compared to an s.s.b. system with the aid of Fig. 2. Note that the sideband amplitude for the s.s.b. signal is E volts while the sidebands in the d.s.b. signal are each $E/\sqrt{2}$ volts in amplitude. This makes the average signal power in the two cases the same. If we assume a noise power P_n to exist in the small bandwidth required to receive the various sidebands the signal-to-noise ratio (on a power basis) will be for s.s.b.

$$\left(\frac{S}{N}\right)_{\text{SSB}} = \frac{E^2}{P_n}$$

Now in the d.s.b. case if we demodulate each of the sidebands properly and combine them, the signal components will add voltage-wise and the two noise components will add on a power basis. Thus we will have a signal voltage of $\sqrt{2}E$ and a total noise power of $2P_n$. The signal-to-noise ratio for the d.s.b. signal will then be (again on a power basis)

$$\left(\frac{S}{N}\right)_{\text{DSB}} = \frac{2E^2}{2P_n} = \frac{E^2}{P_n}$$

which is the same as for s.s.b. Thus we have one important result: when both are properly received, d.s.b. and s.s.b. require the same average signal power for a given signal-to-noise ratio at the receiver. The 9 db. figure we hear quoted so often comes from a comparison based on peak power with full carrier assumed in the a.m. signal.

THE BANDWIDTH SAVING OF SSB—IT WON'T REDUCE INTERFERENCE

This last statement must have convinced even the most broad-minded reader that the author has gone nonlinear, but bear with me a while longer. In a given bandwidth it is quite true that twice as many s.s.b. clear channels may be assigned as d.s.b. clear channels, which would initially lead one to believe that universal use of s.s.b. would result in less interference than universal use of d.s.b. This sort of argument is misleading because we do not use the Amateur bands on a channel assignment basis. Within the band edges we operate wherever and whenever we wish. So we must discard the "double the number of channels" picture and start with a new and more meaningful approach.

The correct approach to the interference problem on the Amateur bands

involves the mathematical theory of probability. Probability theory enters the picture because within the band edges signals appear at random frequencies and at any receiver location with random signal strengths. Thus if we consider this "jumble" of signals on the bands as constituting the interference, we are interested in how the average interference level would be affected if all signals were d.s.b. or s.s.b. This idea of judging performance on an average basis is very important and to illustrate my point let me give an example which has nothing to do with s.s.b. or d.s.b.

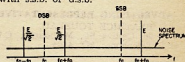


Fig. 2. DSB and SSB Signals in Noise

We all know that at times we can do very well with low power and a poor antenna. In spite of this we don't laugh at the fellow who goes to a kilowatt and puts up a rhombic. Why? Well, because we know that on the average the kw. and rhombic will give better performance than our 6L6-rain gutter combination. In other words we don't judge the performance of a new antenna or a new transmitter on the basis of the one or two hours of operation, but rather we compare the average performance of the new system over a considerable period of time before we come to any conclusion as to whether or not we have made an improvement. This idea of judging performance on an average basis is so simple that it is almost obvious, but don't let this fool you. This way of looking at the situation makes a lot of sense—keep it in mind.

Now let's get back to the s.s.b.-d.s.b. interference question. With the "jumble of signals" picture in mind (if some-one questions this concept let him tune some of the crowded phone bands on a busy week-end) what would be the effect on the average interference level if every signal were s.s.b. instead of d.s.b.? Put another way, if each operator instead of splitting his radiated power equally between two sidebands (d.s.b.) confined all his power to one sideband (s.s.b.), would the average interference level in the band be reduced? The answer is **no**, the average interference level would remain unchanged! In other words on the average the amount of interference which we would get in our receivers would be the same if everyone were transmitting s.s.b. or if everyone were transmitting d.s.b. The reduced bandwidth of s.s.b. will not reduce interference. (Heterodyne interference, which is such a serious problem now, would be eliminated in either the s.s.b. or d.s.b. case since both are suppressed carrier systems.)

* Reprinted from "CQ," January, 1967.

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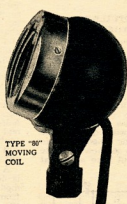


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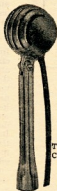


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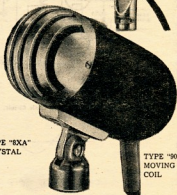


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Modifying the AR7 Receiver

PART THREE

BY G. M. BOWEN,* VK5XU

It is proposed to discuss the installation of two types of noise limiters in this section of the modification scheme. Each circuit has its advantages and its limitations. The choice that you may make will probably be decided by the amount of time—and equipment of course—that you have at your disposal.

The shunt limiter using a crystal diode IN34 in the circuit found in the A.R.R.L. Handbook is probably the simpler of the two to instal, but is not as efficient in its operation as the double series limiter using a 6H6 or 12H6. The use of the 12H6 is not advised unless you have inbuilt 100 c.p.s. filters in your ears since the cathode is well above earth potential and results in quite a fair amount of a.c. hum feeding through. This can be improved and the contact potential of the plate-cathode circuit reduced considerably by operating either the 6H6 or the 12H6 on about 4.5 volts and 9 volts respectively.

Experiments with the 6H6 have shown that cathode emission ceases where the heater voltage falls below 4 volts approximately. The cathode at this lower temperature doesn't follow the a.c. maxima quite so readily and a little experimentation with a series resistor in the heater lead will pay dividends.

Along with others, it was found that the 6H6 or its glass equivalent was better than the later miniature types of double diodes.

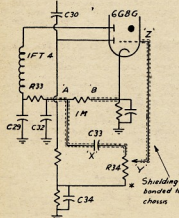


Fig 3-1

* This point is disconnected and grounded if a.v.c. is not required on the 6G8G.

INSTALLING A SHUNT LIMITER

Installing the IN34 means rewiring the diode detector section so that a fixed resistor becomes the diode load instead of the volume control R34. Looking at the original circuit, it will be seen that R36, the grid resistor for the 6G8G, is returned to the junction of R30 and R31. These two form the a.v.c. diode load network; hence with

the decoupling capacitor C34 portion of the a.v.c. voltage is applied to the first audio stage. Anyone wishing to retain the a.v.c. on this stage, and there are advantages in so doing, will simply bring the 'earth' end of the volume control potentiometer to the same junction.

The first modification is to rewire R34 and include it into the grid circuit return and replace it with a diode load of 1 megohm. The lead from the decoupling resistor R33 and by-pass condenser C32 is a shielded one passing along the floor of the chassis from the

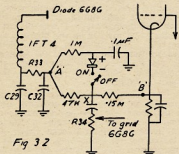


Fig 3-2

second i.f. stage to the front panel where the volume control is located. C33, the audio coupling capacitor, is placed on solder lugs close to the potentiometer and the return lead for the grid circuit, a shielded one, runs parallel to the other one. By transposing these leads on R34 they can still be used.

At the same time lay another screened lead so that an n.b.f.m. adaptor can be included if required. It is easier to do it at this stage than later on when components are replaced and new ones added.

For the IN34 shunt circuit, use a double solder lug strip to mount the components. This can then be fixed on small stand-off pillars to the end of the chassis nearest to the audio control potentiometer. Remove the second phone jack and insert a s.p.s.t. toggle switch for "limiter-in," "limiter-out" control.

Although some Amateurs prefer to leave the limiter in all the time, there are occasions (like listening to the b.c. band!) when well modulated signals are severely distorted unless the limiter is taken out.

With the shunt limiter, screening the input and output circuits from each other doesn't present quite the problems that the double series limiter does. It is also less sensitive to parallel circuit capacitance than the series circuit and so far it has been found slightly better for the long shielded leads required in the AR7.

Without adding the limiter the circuit becomes the one in Fig. 3.1.

With the IN34 limiter "A" and "B" become the points into which the limiter is included and the 1 megohm re-

sistor is removed. Since the shielded leads AX and YZ are already installed the end at X needs only to be lifted and transferred to the input of the limiter.

As all the components of the limiter circuit have been mounted on the solder lug strip attached to the end of the chassis it is an easy move. The audio coupling capacitor, C33, is mounted close to the potentiometer on a stand-off pillar and short leads can be used. The output lead from the limiter goes to C33, the earth lead to the nearest point on the chassis, and the two leads to the on-off switch as direct as possible and clear of C33.

It all makes for a very neat and tidy installation with a minimum of physical alteration.

One word of warning is required. Note the polarity of the circuit and connect the IN34 into it correctly. If you are not sure and the circuit appears to not be working, try reversing the diode.

If a IN34 is not available use a diode with a very low forward resistance and as high a back voltage as possible. This is necessary because signals will feed both ways if the diode has "had it."

This installation made operation on 28 Mc. a possibility in spite of almost continuous auto QRM.

DOUBLE SERIES LIMITER

Eventually curiosity got the better of me and it was decided to pull out the shunt limiter and instal the latest thing in full wave series limiters complete with threshold control, etc. The components were reeled out and a 6H6 installed on a small bracket attached to the end of the chassis with the socket connections facing the front panel. Since the heater supply was still 12.6 volts and a dropping resistor was needed anyhow to reduce the heater voltage to about 4½v., this was attached to a solder lug bracket clear of the components so that the heat could be dissipated without any sad results.

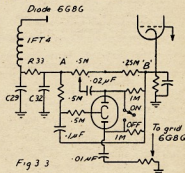


Fig 3-3

Another hole was drilled in the front panel immediately above the "off" etching to take the limiter on-off switch. The threshold control potentiometer went into the hole marked "phones."

(Continued on Page 12)

* 73 Portrush Road, Toorak Gardens, S.A.

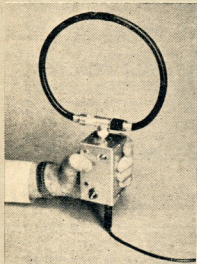
THE "SNOOP-LOOP"

EVERYTHING ELSE IS TRANSISTORISED—WHY NOT A PORTABLE D.F. LOOP?

BY CLAUDE M. MAER, JR., W0IC

HAVE you ever been up a creek without a paddle? To get to the point, have you ever been hidden transmitter hunting on a night as dark as the inside of a potted power transformer? If you have, brush the tar out of your eyes and nose and continue reading.

Picture yourself, after taking off at the start of the hunt, heading in the right direction, signal getting stronger and stronger, excitement increasing with each additional S unit on the meter. You're following your loop closely—it's working just as good as a ten-element beam on 20 fed by a water-cooled kilowatt—and now you're getting out of town into the country—



The box containing the detector and amplifier is also the "handle" for W0IC's "Snoop-Loop." The loop mounting, using a co-ax tee as a support, is a convenience but is not an essential part of the loop assembly. The loop tuning capacitor is screw-driver adjusted. An on-off switch and headphone jack (on the bottom in this view) are the operating controls.

side. The roads are unfamiliar, and the null is beginning to swing rather rapidly, showing that you are getting in close. Whoops—it shifts to give a direction at right angles to the car. You look carefully across the deep ditch beside the road into the dark field where you know your cagey buddy is hiding. No roads into the field as far as you can see in either direction. You dare not waste miles driving up and down the road looking for an entrance, for each tenth of a mile counts.

You park beside the road, grab your flashlight, and plunge into the velvet in the direction your loop null clearly indicates. But after taking a few steps you're up to your armpits in brush and

can't see ten feet forward or backward. You stumble on in hopes of running into the hidden transmitter—you're probably not more than 500 feet from it—but away from your car with its sensitive receiver and amazingly sharp loop it really becomes a hunt for the needle in the haystack. Now do you see what I mean about the lack of a paddle?

After this happened to me a few times, I decided that something had to be done. I had an old loop left over from the early days of transmitter hunting, and it was a simple trick to wire in a germanium diode, capacitor and headphone jack. I was all set—I could leave my car on the nearest main travelled road, walk in to the hidden transmitter, find out how he managed to get in there with his car and—if a helicopter was not necessary—drive right in in jig time.

Well, I tried it at the very next transmitter hunt after bragging quite a bit about my new secret weapon. I reached a very close spot in the car (at least, I thought it was close) and started out on foot. Alas, no signal in my phones. I knew it was tuned to frequency because I had checked it earlier in the evening on a nearby mobile. My "weapon" was a dud. Later checking showed that it was good for only about 25 to 35 feet. Not good enough. What to do?

THE SOLUTION?

All sorts of thoughts came to mind, but the one that kept recurring was the use of a transistor, one of those supposedly magic devices which will some day replace the trusty old UV-201-A and require only a fraction of the power and voltage. But the trouble was that I didn't know anything about transistors. Also, what do transistors cost? Probably several bucks, which was more than I wanted to put into a device used once or twice a month at most. I was very pleasantly surprised to find at my next visit to the radio store that modern production-run transistors cost only about one buck, instead of several. So in I jumped, picked up two of the little devils and headed for the Handbook.¹

Without going into the details, I found that transistors are not at all difficult to understand if you can keep the names of the connections straight in your mind. I also found that the one-buck transistors were only good for audio and i.f. service, and that the most gain could be realised from the so-called common or grounded emitter connection.

Although some experts frown on comparing transistors with vacuum tubes, it was very easy for me to visualise the grounded-emitter circuit as being the same as the customary grounded-cathode circuit of the vacuum tube. (My goodness, it wasn't too long

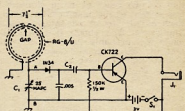


Fig. 1—"Snoop-Loop" circuit for 28 Mc. operation.

The loop is a single turn of RG-8/U inner conductor, the outer conductor being used as a shield. Note the gap in the shielding; about a 1 inch section of the outer conductor should be cut out.

C1—25 pF, midgeet air padder.

C2—0.1 uF, or more (paper).

J1—Open-circuit phone jack.

S1—S.p.a.t. toggle.

"A" and "B" (chassis ground) refer to alternative input circuits shown in Fig. 2.

ago that, as far as I knew, the grounded-cathode circuit was the only way to connect up a tube.) It seems that the base acts like a grid, and the collector acts like the plate. In order to obtain any appreciable plate—oops, collector—current flow, the base has to be biased with a very small voltage of the same polarity as that applied to the collector. Generally speaking, the audio sensitivity and gain of a transistor stage is dependent upon the amount of base bias—within limits, the greater the base bias, the greater the audio sensitivity of the stage. So far so good.

HOW ABOUT THE LITTLE GEM?

About this stage in my mental gyrations, I recalled an article in "QST" about the use of a transistor in a field strength meter.² This struck a familiar note—wasn't a field strength meter just what I wanted for tracking down these wily boys hiding in the burlyshes? I hurriedly located the Little Gem in the measurements chapter of the Handbook,³ and looked at the diagram. It

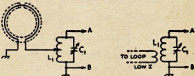


Fig. 2—Input circuits for lower frequency bands.

LI-C1 should cover the desired Amateur band, but the L/C ratio is not critical. In the circuit at the left, adjust the position of the tap on L1 for maximum signal strength. The circuit at the right is for use with a length of low impedance line between the loop and the circuit LI-C1. As an alternative to the inductive coupling shown, the line could be tapped on LI.

"A" and "B" connect to correspondingly designated points in the circuit of Fig. 1, substituting for the loop and C1 in that circuit.

² Campbell, "The Transistorised 'Little Gem,'" "QST," August, 1955.

³ "The Radio Amateur's Handbook, 33rd edition, 1956, page 503.

took me a while to catch on to the metering balancing circuit, but I really got baffled when I looked at the base circuit. Look, Ma, no bias. How come?

This puzzle took a few days of sneaking in a thought now and then during lulls at the office, and then a cryptic note in the Handbook description began to sink in: "The transistor is used in the common-emitter arrangement connected so that the rectified d.c. from the crystal flows in the base-emitter circuit." I got a hot flash—that's where the bias comes from. A little more thought showed me that this was the correct connection for the transistor if the meter were to read relative signal strength, because when a fixed bias is applied to the base circuit the average collector current remains more or less constant for all signal levels. Of course, the instantaneous current will vary with a.c. input so that an audio signal will come through and be amplified.

Right there I had to make a decision. Did I want to use a meter or headphones? For a number of reasons I chose the headphones. In the first place, the trouble I was trying to overcome was lack of sensitivity in my portable loop. I reasoned that the time you need the most sensitivity is when the signal is weak, and with the Little Gem circuit there is less bias on the base with weak signals (remember the Little Gem gets its bias from rectifying the incoming signal) and thus the least sensitivity at that time. Thus, it seemed to me that the signal-biased circuit was not what I was looking for. In addition,

cause there is modulation on the signal at all times and the modulated signal comes through fine.

After doing the thinking for a week or so, it took about a half hour to connect in my transistor audio stage, and I had a real secret weapon, the "Snoop-Loop." It works, too. On the ten metre band I can read signals up to one mile under good transmitting conditions, but even in the thick woods a quarter of a mile is duck soup. I believe that a half mile can be said to be the working range of the device.

It's a good idea to check out these distances carefully, before you make the mistake I made one night. When first testing it out on a hunt, I stepped out of the car to see if I could hear the hidden transmitter. Sure enough, there was a weak signal in the phones. I had become used to using the loop with only the diode detector, and in the excitement of getting in close forgot about the greatly increased sensitivity I had built in. I rushed off down the road on foot, following my Snoop-Loop, and about one mile later at the top of a high hill I stumbled onto the hidden site. Boy, I still have scars from the blisters on my feet! As it turned out, we could have driven on the main road to within 500 or 600 feet of the site and then my little loop would have led us into the location, which could not be seen from the road. In that case a meter might have been helpful, but you can learn the relation of audio strength to distance fairly accurately with a little practice.

I chose a medium-sized aluminium case, 4 x 2 1/2 x 2 1/2 inches. Any equivalent box will suffice and leave plenty of soldering room.

The loop is constructed of RG-8/U co-ax. Since a co-ax "tee" connector is used for convenience and ease of mounting, one end of the co-ax loop is connected to a male plug in the conventional way, but the centre conductor of the other end is shorted to the shield so that the male connector at that end has no connection to the centre prong. This results in an unbalanced circuit, but seems to give good bidirectional null readings as well as an easily detectable maximum reading when the grounded end of the loop is pointed in the direction of the transmitter. Careful tuning will improve this maximum reading as described in an earlier article.⁴

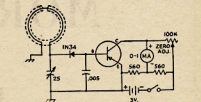


Fig. 3.—The "Little Gem" metering circuit, for use with unmodulated signals. Other components same as Fig. 1.

Placement of parts can be seen in the photographs. Be sure to insulate the headphone jack from the case because both connections are above ground—three volts worth (no danger of any serious shock!). Also, don't forget to remove one inch of shielding from the top of the loop. You won't get much signal unless you do.

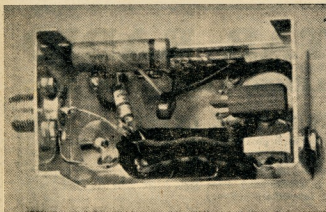
The Snoop-Loop is not limited to the ten metre band or to a built-in loop. Fig. 2 shows alternative circuits for other bands and for plugging in a separate loop connected by a low impedance transmission line.⁵ Select coil and capacitor combinations that will tune to the desired frequencies. Plug-in coils could be used. It's a good idea to have the r.f. end of the unit fairly well shielded, to eliminate signal pickup except through the loop. Incidentally, sensitive high impedance phones really improve the performance of the Snoop-Loop. I use a single hearing aid button type with 8,000 ohms impedance and 2,000 ohms d.c. resistance.

Fig. 3 shows the Little Gem connection for using a meter in place of the headphones.

I don't know if this little loop will be as helpful to you as the paddle we originally talked about, but it sure helps on a dark night in the country. (Tip to the hidden transmitter operator: If you want to foul up some of your pals using these loops, just hide near the transmitting antenna of a 50,000 watt broadcasting station. But that's another story!)

⁴ Amphar, "Unidirectional Loops for Transmitter Hunting," "QST," March, 1955.

⁵ Duncan, "Transmitter Hunting—Seattle Style," "QST," March, 1955; Norberg, "Transmitter Hunting with the D.F. Loop," "QST," April, 1954.



Interior construction is very simple, a lug strip providing wiring terminals for most of the parts. The two penlite cells are wrapped with tape and supported by leads soldered to the terminals.

the use of a meter requires a light on the meter face when it is being read, and three hands are needed to hold the loop, a separate meter case and the light. At the same time you want to keep a sharp lookout where you are walking and, most important, for the hidden transmitter itself. Even if a battery-operated pilot light were to be installed, meters have to have a balancing circuit and tend to jiggle when carried. Also, they will go off scale when getting in close, and I hated to think of my nice surplus 100 microampere meter winding its needle around the peg. As it turned out, the headphones have been very satisfactory for the transmitter hunts here in Denver be-

In localities where the signal from the hidden transmitter is unmodulated the meter circuit will have to be used. The Little Gem should work quite well, but some means should be included for reducing sensitivity to keep that meter pointer straight. Sometimes, detuning the input circuit will do the trick, but if the only tuning is in the loop circuit itself, detuning may cause some strange directional effects.

CONSTRUCTION

Fig. 1 shows how simple the unit really is. Almost any size box can be used, but I happen to be one who does not like to burn his fingers trying to solder connections in small places, so

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VK-ZL DX CONTEST, 1957

Phone—1000 GMT, Saturday, 5th October, to 1000 GMT, Sunday, 6th October
CW— " " " 12th " " " 13th "

N.Z.A.R.T. and W.I.A., the National Amateur Organisations in New Zealand and Australia, invite world-wide participation in this year's VK-ZL DX Contest.

Objects: For the world to contact VK and ZL Stations and vice-versa.

When?: Phone—24 hours from 1000 G.M.T., Saturday, 5th October, to 1000 G.M.T., Sunday, 6th October.

C.W.—24 hours from 1000 G.M.T., Saturday, 12th October, to 1000 G.M.T., Sunday, 13th October.

Duration for all contestants is 24 hours.

RULES

1. There shall be three main sections to the Contest—
(a) Transmitting Phone.
(b) Transmitting C.W.
(c) Receiving—Phone and C.W.

2. The Contest is open to all licensed Amateur transmitting stations in any part of the world. No prior entry need be made. Mobile Marine or other non-land based stations are not permitted to enter the Contest.

3. All Amateur frequency bands may be used, but no cross-band operating is permitted.

4. C.W. will be used for the **second** week-end and Phone for the **first** week-end. Stations entering for both Phone and C.W. must submit entirely separate logs for each.

5. Only one contact per band is permitted with any one station for Contest purposes.

6. Only one licensed Amateur is permitted to operate any one station under the owner's call sign. Should two or more operate any particular station, each will be considered a competitor, and must submit a separate log under his own call sign.

7. Entrants must operate within the terms of their licences.

8. **Cyphers:** Before points may be claimed for a contact, serial numbers must be exchanged and acknowledged. The serial number of five or six figures will be made up of the RS (telemetry) or RST (c.w.) reports plus three figures which may begin with any number between 001 and 100 for the first contact, and which will increase in value by one for each successive contact, e.g. if the number chosen for the first contact is 053, then for the second contact the number must be 054, for the third 055, and so on. If any contestant reaches 999, he will start again with 001.

9. Entries must be set out as shown in the example below, using one side of the paper only. Entries must be post-marked not later than the 31st October, 1957, and addressed to the Federal Contest Committee, W.I.A., Box 1234K, G.P.O., Adelaide, South Australia.

10. **Scoring:** For VK-ZL Stations only—Five points will be scored for each contact on a specific band with an overseas station, and in addition for each new country worked on that band a bonus of 20 points will be added. For the purpose of this rule the official countries list will apply with the exception that each VE, W, and ZS call area will count as a separate country.

For Overseas Stations—Five points will be scored for each contact on a specific band with a VK or ZL call area (ZL1, 2, 3, and 4; VK0 (zero), 1, 2, 3, 4, 5, 6, 7, and 9), and in addition for each new call area worked on that band a bonus of 50 points will be added.

11. Logs submitted by overseas contestants should be set out as shown in this example. (VK and ZL entrants will modify their logs accordingly.)

VK-ZL DX Contest, 1957

Page 1

Name Section
Address Call Sign

Claimed Scores: Total.....

Band Scores: 80 Metres.....

40
20	"
15	"
11	"
10	"

Tx Input Power.....Aerial(s).....

Declaration: I hereby certify that I have operated in accordance with the rules and spirit of the Contest.

Signed.....

Date.....

12. The right is reserved to disqualify any entrant who, during the Contest, has not observed regulations or who has consistently departed from the accepted code of operating ethics.

13. The ruling of the Federal Contest Committee of the W.I.A. will be final. No dispute will be entered into.

14. Awards—

(a) **VK-ZL Stations.**—The W.I.A. will award certificates to the top scorer on each band and the top scorer in each VK and ZL district. Additional certificates may be awarded depending on the number of logs received.

(b) **Overseas Stations.**—Certificates will be awarded to the highest scorer in each country (each call area in VE, W and ZS). Additional certificates will be awarded depending on the number of logs received, e.g. to the high scorers on different bands and to place winners where scores are exceptionally high.

RECEIVING SECTION

1. The rules are the same as for the transmitting section, but it is open to all members of any Short Wave Listeners' Society in the world. No transmitting station is permitted to enter this section.

2. The Contest times and logging of stations on each band per week-end are as for the transmitting section.

3. To count for points, logs will take the same form as for the transmitting section but will omit the serial number received. Logs must show the call sign of the station heard (instead of "worked"), the serial number sent by it, and the call sign of the station being called.

Scoring will be on the same basis as for transmitting stations. It is not sufficient to log a CQ.

4. VK receiving stations may log overseas and ZL stations, while ZL receiving stations may log overseas and VK stations.

5. Certificates will be awarded to the highest scorers on the same basis as for the transmitting stations.

VK-ZL DX Contest, 1957

Page 2

Date Oct.	Band Mc.	Time G.M.T.	Station Worked	Serial Sent	Serial Received	Points Claim.	Bonus Points	(Leave Blank)
5th	14	1054	VK2XYZ	57001	54027	5	50	
	14	1100	VK3ABC	54002	44131	5	50	
	14	1110	VK3AXQ	46003	57008	5	—	
	21	1220	VK3AZX	58004	56045	5	50	
	21	1230	ZL2XYZ	56005	57152	5	50	
	21	1257	ZL2ABC	55006	45013	5	—	
	21	1315	VK9XY	57007	58141	5	50	
	21	1405	VK9AB	59008	59016	5	—	
TOTAL (Points Claimed + Bonus Points)						40 + 250 =	290	

[Contestants are requested to maintain "sent" serial numbers in the correct sequence and not to divide their logs into bands.]

The Evils of Multiband Antenna Systems —And the Cure*

BY LEWIS G. MCCOY, W1ICP

A LOOK through "The Radio Amateur's Handbook" of ten years ago will show that there was only one commercial transmitter using the pi-network output circuit. However, the 1957 edition of the Handbook shows that pi networks are the rule rather than the exception. It would be safe to say that over 90 per cent of store-bought transmitters use this type of output circuit.

Why the trend to pi networks? The answer is simple. The pi network lends itself readily to compact band-switching transmitter design. It means the elimination of plug-in coils, and this is exactly what the average Joe Ham wants. He may never operate anything but 40 c.w., but he still likes to know that all it takes is a flip of the switch to put him on another band. He also has heard that a pi network is an ex-

● Just when you're happy as a lark with your multiband antenna, some guy will come along and tell you what's wrong with it, as W1ICP does in this article. But he doesn't stop there; he shows how easy it is to correct the situation.

A multiband antenna is exactly what the term implies; it is good for more than one band. If we put an 80 metre signal into the antenna the signal will be radiated. If that 80 metre signal has a 40 metre harmonic our multiband antenna is going to accept and radiate the harmonic as well as the fundamental. (Have you heard from the P.M.G. lately?) If the antenna were an 80 metre job only it would be resonant at 80, but it would still be capable of accepting and radiating any odd-harmonic (3rd, 5th, 7th) energy.

This leads up to another question: How much harmonic signal can we tolerate? The P.M.G. is quite specific in its definition of our rules on this point. All spurious signals must be attenuated to a point where they will not cause interference to other services. It is extremely difficult to apply exact figures on harmonic content in a transmitter—there are too many factors that get into the act to foul up our calculations. However, let's make a few assumptions to illustrate what one can expect in harmonic attenuation.

THE DECIBEL

In discussing attenuation of harmonics we use the relative power unit called the decibel (abbreviated "db.") and pronounced "dee bee". You'll hear the term db. a lot in your Amateur career, so it would be well to become familiar with it. To familiarise yourself with power gains and losses expressed in db., look at Table 1. You

can see from the table that if you had a power increase of "10 db." it would be the same as a power increase of 10 times. If we had a harmonic reduction of 20 db., the harmonic power would be decreased to 0.01 of its original or comparison value.

Getting back to our discussion of tank circuits and multiband antennae, let's assume for the moment that our amplifier is properly tuned, and our second harmonic is down 30 db. from the fundamental. This is a reasonable figure and about what we can expect in the average tank circuit. It does not take into consideration any stray harmonic coupling that might be present in the transmitter. A glance at Table 1 indicates that 30 db. reduction means a power ratio of 0.001. With a 100 watt signal, the second harmonic would be 0.1 watt if the harmonic reduction was 30 db. Many Amateurs would say a 0.1 watt signal isn't worth discussing—it just wouldn't cause you any trouble. Well, let's look at the record.

Db.	Power Gain	Power Reduction
10	10	0.1
20	100	0.01
30	1,000	0.001
40	10,000	0.0001

Table 1.

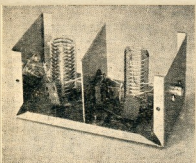
Power gain and reduction factors.

Recently, Amateurs have been experimenting with transistor rigs using powers on the order of a fiftieth of a watt. One Ham has worked over 10,000 miles with such a rig. It doesn't take a mathematical wizard to figure out that a tenth of a watt is considerably stronger than a fiftieth.

One of the better methods for finding out if you are radiating unwanted signals is to have a nearby Ham listen for harmonics. Don't pick out someone next door to you; his receiver will be overloaded by your signal and he is likely to hear all kinds of spurious signals (which will be generated in his receiver—not your rig). Find someone who is at least four or five hundred yards away. A careful check on his part will soon show whether or not your rig is clean. If there are unwanted signals present, then obviously you must eliminate them if you're going to avoid notices from the P.M.G. If the signal several hundred yards away is barely detectable above the noise level it isn't worth worrying about, but a solid S5 or S6 signal is just cause for concern.

THE HALF-WAVE FILTER

A simple way to obtain the necessary attenuation is with a half-wave filter. A filter of this type installed in the feed line will permit any signal within the



This unit is the 40 metre band-pass filter. The shield between the two filter sections is a piece of aluminum, slightly narrower than the width of the box.

cellent circuit to prevent harmonic radiation and is just what he needs to keep from getting t.v.i. This last is not completely true. A pi network is no better than the "old-fashioned" parallel tuned, link coupled circuit. In fact, an improperly tuned pi network can give very poor harmonic suppression.

About now the Novice is going to ask, "What has all this to do with multiband antenna systems?" Bear with us and we'll show you. Most transmitters using a pi are designed to work into a 50 or 75 ohm load, which of course suggests the use of co-ax feed line of that impedance. If you have a multiband transmitter it naturally follows that you want a multiband antenna that is coax fed. This desire has led to the development of trap antennae and multiple dipoles¹ fed with a single co-ax line. No one wants an antenna coupler between the transmitter and the feed line because this will mean additional adjustments. Right here is where we run into troubles.

*Reprinted from "QST," March, 1957.

¹Berg, "Multiband Operation with Parallel Dipoles," "QST," July, 1956; Greenberg,

"Simple Trap Construction for the Multiband Antenna," "QST," October, 1956.

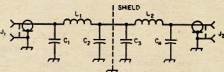


Fig. 1.—Schematic diagram of the band-pass filter.
C1, C2, C3, C4—3.5 Mc.—620 pF., 500 volts, mica.
7 Mc.—470 pF., " " "
14 Mc.—220 pF., " " "
21 Mc.—150 pF., " " "
28 Mc.—110 pF., " " "
J1, J2—RCA type phono jacks
L1, L2—3.5 Mc.—12 turns No. 18, 1 inch diam., 8 t.p.i.
7 Mc.—13 turns No. 18, ½ inch diam., 8 t.p.i.
14 Mc.—10 turns No. 18, ½ inch diam., 8 t.p.i.
21 Mc.—7 turns No. 16, ½ inch diam., 4 t.p.i.
28 Mc.—7 turns No. 18, ½ inch diam., 4 t.p.i.

(Right lengths of coil stock are required for each filter.)

band to reach the antenna, but signals above and below the band are attenuated. Thus this type of filter protects against both harmonics and undesired low frequency signals. The protection against harmonics is always good; the protection against undesired low frequency signals is something of a variable with different transmitters and antennae.

Harmonic attenuation with this filter is approximately 30 db. for the second, 50 db. for the third, and 60 db. for the fourth, increasing with each harmonic. The filter will eliminate the need for the customary low-pass t.v.l. filter, and thus the band-pass filter does double duty for this. The drawback, and it is not a serious one, is that a separate filter is needed for each Amateur band. The simplest way to operate with the filters is to build one for each band and equip the filters with phono type jacks. Then the feed line can be quickly plugged into the proper filter.

It is impractical to switch filters for each band for one very good reason. The purpose of the filters is to stop unwanted signals from reaching the antenna. A switching arrangement would necessitate switching the input and output leads to the filters and it would be very difficult to prevent harmonic leakage around the switch. That is why we suggest plug-in filters. It only takes a second to change the feed line to the correct filter. Incidentally, the filters described here will work with either 50 or 75 ohm co-axial cable.

CONSTRUCTION

Before starting construction study the photograph and Fig. 1. Each filter consists of two coils and four mica capacitors mounted in a 2 1/2 x 5 x 2 1/4 inch aluminium box. However, if one wishes to save on chassis costs, the filters can be enclosed in coffee cans or any other metal enclosure that will provide good shielding.

The coils are self-supporting, and a rubber grommet should be used in the shield wall to prevent the coil wire from shorting to the chassis. A solder lug should be mounted each side of the shield wall immediately below the grommet hole. All the ground leads from C1, C2, C3 and C4 should be soldered to these lugs. The leads from C2 and C3 to the coil wire should be kept as short as possible and connected to the wire close to the shield wall.

OPERATION

There are a few important points to remember when using the filters. The co-ax feed line should have a low standing wave ratio, not much more than 2 to 1. A high s.w.r. may cause excessive voltages to develop across the components in the filter, and in such a case the filter might be ruined. When changing bands, remember to change the filter first. Otherwise, you'll be almost sure to burn out the filter. With the component values listed in Fig. 1, the filter is capable of handling a 250 watt transmitter. One can readily see that this type of filter is the simple answer to harmonic attenuation and protection when using a multiband antenna system.

SINGLE SIDEBAND:

IS IT REALLY BETTER THAN AMPLITUDE MODULATION?

(Continued from Page 3)

output. This you know you can do because the voltages and powers quoted are those which exist in class C telephone service during modulation peaks.

Without getting into too much circuit detail or d.s.b.-linear amplifier power comparisons this much is clear: the class C amplifier with its ability to put out large amounts of peak power is ideally suited for voice service in the circuit of Fig. 3 (a). The average voice sideband power produced by a pair of tubes in d.s.b. service will easily match the average voice sideband power produced by the same tubes in s.s.b.-linear amplifier service.

The above power discussion actually underplays an important advantage of d.s.b. over s.s.b. In d.s.b. or standard a.m. systems voice clipping and filtering, if properly done, can increase significantly the average sideband power output of a given transmitter. Such tricks cannot be used in s.s.b. since a flat-topped wave is deadly to an s.s.b. system. (Such a waveform results in a very high peak-to-average power ratio for the s.s.b. signal.) Do not confuse peak clipping with the peak limiting or audio a.g.c. tricks that are sometimes used in s.s.b. designs. These are defensive measures which in effect permit the audio peaks to fully load but not overload the linear r.f. amplifier. The average power gain of d.s.b. using a good clipper-filter over s.s.b.

can be considerable but for the moment I'm willing to settle for a draw.

A few final comments: The r.f. excitation in d.s.b. service is not at all critical. Adjust for normal phone drive and you've got it made. That is one reason why screen modulation of tetrodes is to be preferred over control-grid modulation of triodes. You can use triodes but you have to watch the ratio of audio voltage to r.f. voltage. With the tetrodes you just read the grid mills. The r.f. exciter of course is normal—use the one you've got. One more thing—we said that only one tube works at a time. This is true except that the "off" tube acts as a neutralising capacitor for the "on" tube. The circuit is self neutralising since the grid-plate capacitance of the "off" tube is in just the right spot for grid neutralisation.

CONCLUDING REMARKS

I would not like to oversell d.s.b.: it won't perform miracles. However, when compared with s.s.b. we may draw the following conclusions:

1. S.s.b. has no power advantage.
2. S.s.b. will not reduce interference.
3. S.s.b. is much harder to generate.

That's the end of my story, which is a good thing because I can see them coming for me now.

AUSTRALIAN RADIO AMATEUR

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JUNE 1957



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THE 1957 EDITION CONTAINS—

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- Over one thousand additions, alterations and deletions since the last edition, making more than three thousand amendments since the 1954 edition.
- DX Countries, Prefixes and their Zones.

EASY WAY TO GET DX CERTIFICATES*

BY "CANDIDUS"

Gone are the days when it took hard work to get real DX. There is now a system so radically different, so wonderfully simple, that the Amateur transmitter finds himself asking, "Why hasn't somebody thought of it before?" But, then, it's been the same with every invention which has been of benefit to humanity. The bright boy who thought of putting a crinkle in hairpins, the unknown genius who invented the water closet—humanity owes them something. And now, radio owes a debt of gratitude to those who have evolved this simple method of getting DX.

This new system works. It has been tried out on the 20 metre band with results that have staggered, indeed rocked, those privileged to hear the system in operation. It has a formula which is even simpler than that of Ohm's Law, which, as some radio enthusiasts know, is a very easy formula to master.

The simplified DX Formula is:—

$$\frac{A+B}{C} = DXCC + QSL$$

where A = an Amateur Radio Station in Indo China (or anywhere else).

B = an Amateur Radio Station in Algeria (or anywhere else).

C = An Amateur Radio Station in Australia.

The formula is worked this way—A hears B but very faintly and, an optimist to the last, gives him a call. B does not hear A at all well, but obviously suspects that someone is calling him. C, down under in Australia, hears both the boys and, being a big-hearted Aussie, he steps into the breach. He calls them both. A then calls C who, in turn, calls B, who goes back to C plus A. C then calls A and gives him all the gen from B. And so it went on.

A couldn't hear B. Neither could B hear A. But they could both hear the enterprising C, who fed each with details about the other.

The naive part of this internal triangle was that A and B promised not only to QSL C, but to QSL each other! A and B both got cards; but neither had heard a peep out of the other. It opens up a pretty problem which only a legal gentleman could solve, and that could become expensive.

Yet this is a good system. It gets results. I now have a working arrangement with a big-hearted Amateur who lives not far away, and whose transmitter has a kick like two tons of coal

dropped from a great height. When I hear some choice DX, all I have to do is to give him a call and he does the rest. I get the cards and he gets the fun. You can't lose!

If this system grows, we might see a special certificate for "VERIFIED IMAGINARY CONTACTS VIA A THIRD STATION." Such an award will be eagerly sought by those who have faith in this new system. There will, of course, be difficulties, especially in the telephony band, but difficulties are but a challenge to the Amateur who has the right spirit.

C.D.E.N. NEWS

One of the most heartening pieces of news which emerged from the Federal Convention is the uprise of interest and impetus given Emergency Activity in VK5. A number of Type 121 sets have been released by the Army and pressed into service. Other Divisions are advised to seek from Department of Supply, details of equipment to be released in the near future which would be useful for emergency purposes.

For benefit of members, current list of C.D.E.N. Co-ordinators is set out hereunder:

- Federal—G. Glover (VK3AG).
- VK3—J. Corbin (VK3YC).
- VK3—R. Busch (VK3LS).
- VK4—V. Jeffs (VK4VJ).
- VK5—J. P. Sullivan (VK5JX).
- VK5—H. T. Mulder (VK5MK).
- VK5—R. O'May (VK5OM).
- VK6—F. Nolan (VK6FN).

Anticipation of an emergency and prewarning of the Control Station and Network generally will often mean the difference between success and failure.

For example, the approach of a storm, flood or fire is, in many cases, preceded in a given area by certain conditions which give due warning. Notifying the Network enables City Amateurs to be alerted ready to maintain watch during business hours; furthermore, it ensures that traffic originating in the City will be received by the Network which has been alerted.

Recently two cases have occurred where communication has been requested to an area in which a state of emergency was in progress and Amateurs in that area have not been listening. In both cases due warning had been given in the area and stations all around the affected area have taken up the relay without achieving results. In one case another Amateur voluntarily drove his mobile equipment fifty miles to the scene to establish vital communications.

The practice adopted by wide-awake members in areas where the danger is high is recommended to all Amateurs. That is, a tuner set to emergency calling frequency is fed into i.f. stages of h.c. receiver so that when a station comes up on the frequency the signal is super-imposed upon the XYL's favorite programme. The XYL then follows pre-determined procedure to bring the OM into action.

If you have any ideas for suitable transferred unit for this purpose, send circuit and short story to the Editor of "Amateur Radio" for publication.

The second Communications Study Period at Mount Macedon was attended by the following members of the W.I.A. who represented their respective Divisions:

- VK2HO—H. J. Hart.
- VK2VJ—George Robertson.
- VK4FP—J. F. Pickles, Vice-President.
- VK3AG—G. Glover, Federal Executive.

Thanks to the courtesy of the Commandant of the School, your Federal Co-ordinator was able to address all assembled and outline the Institute's past and present activities. He was also able to outline our future proposals and indicate the Amateur's place in the whole scheme.

MODIFYING AR7 RECEIVER

(Continued from Page 8)

The few resistors and capacitors were wired across and around the socket, isolating as far as possible the input and output circuits. Minimum capacitance to earth and complete isolation of input from output leads is the secret of success.

Data issued by the Hallcrafters Company for modifying the noise limiter in the SX28 stresses the need to have the double diode, 6AL5, as close as possible to the detector diodes. All circuits including this type of limiter seem to include a separate 6H6 or 6AL5 as audio detector and a.v.c. rectifier. I suspect that any lack of real success with this type of limiter in the AR7 may be due to the long leads and the use of the diodes in the 6G8G for detection, etc.

It does work but not really as well as it should. If it can be tolerated, leave the limiter in all the time, set the threshold by fixed resistors, mount the 6H6 immediately above the last i.f.t. and get as short leads as possible.

Ground the cathode of the 6G8G and return the grid through the volume control to the a.v.c. line as shown in Fig. 3.1 for some fixed bias. Large signals will give higher bias and thus some measure of control over distortion will be achieved.

OVERSEAS AWARDS

"SHORT WAVE MAGAZINE" AWARDS

Cards, from overseas claimants only, need NOT be sent with the original application, which must, however, include a full check list—band, call sign and station—worked-to-justify the claim. From the check list, all or any cards may be called in for scrutiny, or details asked for in relation to particular contacts.

In no case can a Certificate be issued without proofs, or evidence considered good and sufficient that the claimed contacts have been confirmed.

From overseas applicants (only) claims duly certified by the headquarters of the Amateur Radio organisation for the country concerned can be accepted. All overseas claims must be accompanied by five I.R.C.s.

WORKED ALL GM AWARD

The Aberdeen Amateur Radio Society is now offering the "Worked All GM Award" to licensed Amateurs for 25 or 10 I.R.C.s. to submit proof of contact since October 1, 1946, with one GM2 station, fifteen GM3, one GM4, one GM5, one GM6 and one GM8. Contacts may be phone or c.w. or mixed, with minimum reports of RS33 or RST338. Cross-band contacts will not be accepted.

Claims for the award, accompanied by the 20 I.R.C.s. cards and a remittance for 25 or 10 I.R.C.s. should be sent to A. G. Anderson (GM3BCL), "Heiford", Pitlochry, Aberdeen, from whom full details may be obtained.

VA-JF CERTIFICATE

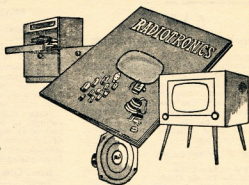
The Richmond (Virginia) Amateur Radio Club is issuing the "J-F Certificate" in connection with the 1947 Jamestown Festival which will be opened in April next to commemorate the 350th Anniversary of the first permanent English Settlement in America in 1607.

To claim the award, Amateurs must submit QSL cards confirming two-way contacts with 20 different VA-JF stations. The Club is wealthy of Virginia during the period January 1 to December 31, 1947.

Claims should be addressed to the Richmond Amateur Radio Club, P.O. Box 1956, Richmond 18, Virginia.

* Reprinted from "Break-In," January, 1967, with modifications.

REACH



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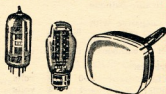
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VALVE DATA

6AV6

TWIN DIODE, HIGH-MU TRIODE

The Radiotron 6AV6 is a miniature valve containing two diodes and a high-mu triode in one envelope. The triode section is suitable for use in television and a.m. radio receivers as an audio amplifier; and the diodes for use in television receivers for such a purpose as an a.g.c. clamp, and in a.m. radio receivers as a detector and an a.v.c. voltage rectifier.

Base: 7 pin miniature.

Socket connections:

- Pin 1—Triode Grid.
- Pin 2—Cathode.
- Pin 3—Heater.
- Pin 4—Heater.
- Pin 5—Diode Plate No. 2.
- Pin 6—Diode Plate No. 1.
- Pin 7—Triode Plate.

Electrical Data

Heater Voltage 6.3 volts
Heater Current 0.3 amp.

TRIODE UNIT AS CLASS A1 AMPLIFIER

Maximum Ratings:

Plate voltage 300 max. volts
Grid voltage, positive bias value 0 max. volts
Plate dissipation 0.5 max. watts
Peak Heater-Cathode Voltage:
Heater negative with respect to cathode 90 max. volts
Heater positive with respect to cathode 90 max. volts

Characteristics:

Plate voltage 100 250 volts
Grid voltage -1 -2 volts
Plate resistance 8000 62500 ohms
Amplification Factor 100 100
Transconductance 1250 1600 μ mhos
Plate current 0.50 1.2 Ma.

DIODE UNITS

Maximum Rating:

Plate current (each unit) 1.0 max. Ma.

The two diode plates are placed around a cathode, the sleeve of which is common to the triode unit. Each diode plate has its own base pin. Diode biasing of the triode unit is not recommended.

50 Mc. W.A.S.

Call	Cer. Add. No. Cntr.	Call	Cer. Add. No. Cntr.
VK1WJ	13 4	VK2AEZ	10 1
VK1PG	5 3	VK2KA	11 1
VK2VW	9 3	VK3GM	12 1
VK4RY	2 2	VK3ACL	14 1
VK4RR	4 2	VK3ED	16 1
VK5LC	4 2	VK2HO	17 1
VK6DW	3 1	VK2ABC	8
VK3RR	6 1	VK2WH	15
VK3HT	7 1		

6BQ6GTB/6CU6

BEAM POWER VALVE

The Radiotron 6BQ6GTB/6CU6 is a beam power valve designed for use as a horizontal deflection amplifier in television receivers.

This valve has a maximum peak positive-pulse plate voltage rating of 6000 volts (absolute), a maximum peak negative-pulse plate voltage rating of 1250 volts, and a maximum direct plate voltage rating of 600 volts. These ratings, in addition to a plate dissipation of 11 watts and a grid No. 2 input of 2.5 watts, enable a single valve in a suitable circuit to deflect picture tubes having diagonal deflection angles of 90°.

Base: Octal.

Socket connections:

- Pin 1—No connection.
- Pin 2—Heater.
- Pin 3—No connection.
- Pin 4—Grid No. 2.
- Pin 5—Grid No. 1.
- Pin 7—Heater.
- Pin 8—Cathode, Grid No. 3.
- Cap—Plate.

Electrical Data

Heater Voltage 6.3 volts
Heater Current 1.2 amps.

Class A1 Amplifier*

Transconductance 6000 μ mhos
Plate resistance (approx.) 18000 ohms
Plate current 65 Ma.
Grid No. 2 current 2.1 Ma.
(* with plate volts 250, Grid No. 2 volts 150, Grid No. 1 volts -22.5)

HORIZONTAL DEFLECTION AMPLIFIER

For operation in a 625-line, 25-frame system.

Maximum Ratings:

Direct plate voltage 600 max. volts
Peak positive-pulse plate voltage† (absolute max.) 6000 max. volts
Peak negative-pulse plate voltage 1250 max. volts
Direct grid No. 2 (screen) voltage 200 max. volts
Peak negative-pulse grid No. 1 voltage 300 max. volts
Cathode current:
Peak 400 max. Ma.
Average 112.5 max. Ma.
Grid No. 2 input 2.5 max. watts
Plate dissipation† 11 max. watts
Peak Heater-Cathode voltage:
Heater neg. with respect to cathode 200 max. volts
Heater pos. with respect to cathode 200 max. volts
Bulb temperature (at hottest point) 220 max. °C.

Maximum Circuit Value:

Grid No. 1 circuit resistance 0.47 max. megohm

† The duration of the voltage must not exceed 15 per cent. of one horizontal scanning cycle. In a 625-line, 25-frame system, 15 per cent. of one horizontal scanning cycle is 10 microseconds approx.

† Under no circumstances should this absolute value be exceeded.

† An adequate bias resistor or other means is required to protect the tube in the absence of excitation.

† The d.c. component must not exceed 100 volts.

6BQ7A

MEDIUM-MU TWIN TRIODE

Radiotron 6BQ7A is a medium-mu twin triode of the 9-pin miniature type. This tube has high transconductance, low input capacitance, low input loading and low plate-to-cathode capacitance. These features make the 6BQ7A especially useful in the direct-coupled r.f. stage of television receivers utilising a driven r.f. grounded-grid (cascode) amplifier circuit. Use of the 6BQ7A in such circuits provides a reduction in noise with resultant improved receiver sensitivity.

Base: 9-pin miniature.

Socket connections:

- Pin 1—Plate of unit No. 2.
- Pin 2—Grid of unit No. 2.
- Pin 3—Cathode of unit No. 2.
- Pin 4—Heater.
- Pin 5—Heater.
- Pin 6—Plate of unit No. 1.
- Pin 7—Grid of unit No. 1.
- Pin 8—Cathode of unit No. 1.
- Pin 9—Internal shield.

Electrical Data

Heater voltage 6.3 volts
Heater current 0.4 amp.

AMPLIFIER—CLASS A

(Values are for each unit)

Maximum Ratings:

Plate voltage 250* max. volts
Plate dissipation 2 max. watts
Cathode current 20 max. Ma.
Peak heater-cathode voltage:
Heater neg. with respect to cathode 200* max. volts
Heater pos. with respect to cathode 200 max. volts
* Under cut-off conditions, in r.f. grounded-grid circuit with direct-coupled drive, it is permissible for this voltage to be as high as 300 volts.

Characteristics:

Plate voltage 150 volts
Cathode-bias resistor 220 ohms
Amplification factor 39
Plate resistance 6100 ohms
Transconductance 6400 μ mhos
Plate current 9 Ma.
Grid volts (approx.) for plate current of 10 μ amp. —10 volts

Typical Operation in Push-Pull R.F. Grounded-Grid Circuits:

Plate voltage 150 volts
Grid voltage obtained from Rk -2 volts
Cathode resistor (common to both units) 100 ohms
Plate current 10 Ma.

Typical Operation in R.F. Grounded-Grid Circuit with Direct-Coupled Drive:

Unit No. 1 (driver tube) is directly coupled with Unit No. 2 (driven r.f. grounded-grid amplifier tube).
Plate supply voltage 250 250 volts
Plate voltage 135 115 volts
Grid voltage -1 volt
Grid resistor 0.5 megohm
Plate current 10 10 Ma.

Grid voltage (approx.) for plate current of 10 μ amp. —15 — volts

Peak heater-cathode voltage: heater negative with respect to cathode 1 250 volts

Maximum Circuit Values (Each Unit):

Grid-circuit resistance 0.5 max. megohm

AMATEUR CALL SIGNS

FOR MONTH OF MARCH, 1957

NEW CALL SIGNS

- VK—**
Antarctica
 0JG—J. Goodspeed, Mawson.
- New South Wales**
 2GJ—J. G. Virtue, Dangar Street, Pilliga.
 2JG—N. S. Hill, "Montague," Riddell St., Manly.
 2ABK—K. L. King, Honour Street, Lawson.
 2ANT—Tamworth Radio and Electronics Club, Peel St., Tamworth.
 2AOL—M. S. Latham, 168b Hunter St., Glen Innes.
 2AVH—W. O. Hill, 15 Morgan St., Petersham.
 2ZDF—S. W. H. Fairbairn, 9 Lemnos Pde., Newcastle.
- Victoria**
 3IA—K. H. Gee, 23 Pope Road, Blackburn.
 3JF—J. C. Batchler, 14 Simpson St., Kew.
 3AOM—G. W. Baty, 79 Benalla Rd., Caulfield.
 3AUG—G. Wood, 60 Vincents Ave., St. Albans.
 3AWK—W. H. Kerr, 17 Jasper St., Noble Park.
- Queensland**
 4AD—A. M. Miers, 9 Bellvue St., West Bundaberg.
 4BV—B. Vines, 3 Leeson St., West Bundaberg.
 4CT—Central Technical College, George St., Brisbane.
 4DR—L. G. England, 19 Kenilworth St., Mackay.
 4TA—C. T. Amore, 45 Minimize St., Stafford.
 4ZBB—B. M. Byrne, 118 Central Ave., Indooroopilly.
- South Australia**
 5DS—D. Scott, C/o. Measday, Box 95, Bute.
 5ES—C. E. Stialard, 27 White Ave., Lockleys.
 5UM—R. L. Umberger, C/o P.M. Alice Springs.
 5ZBJ—J. K. Johnston, 63 Ninth Ave., Joslin.
 5ZBN—B. A. Endersbee, 15 Holme Ave., Lower Mitcham.
 5ZDF—R. A. C. Washington, 94 Main North Rd., Enfield.
- Western Australia**
 6TM—F. Wiseman, C/o W. E. Milward, Barragup, via Pinjarra.
Territory of Papua-New Guinea
 9MK—M. J. Kopunek (Rev.), Catholic Mission, Kavieng, New Ireland, T.N.G.

CHANGES OF ADDRESS

- VK—**
New South Wales
 2QU—C. A. Waldoock, 31 Andrew St., Lithgow.
 2XU—W. L. Nye, 34 Merrenburn Ave., Naremburn.
 2YY/T—Sydney Technical College, North Sydney Technical College, Pacific Highway, Gore Hill.
 2AKQ—J. H. Lambert, 219 Windsor Rd., Northmead.
 2AVG—E. G. V. Gabriel, 107 Grant St., Fort Macquarie.
 2ZAA—R. K. Dodd, Lambie St., Tumut.
 2ZAE—A. K. Greenhalgh, Lot 41, Garden Grove Pde., Adamstown.
- Victoria**
 3HV—H. R. Hunter, "Bob's Knob," Golf Pde., Rye.
 3OI—R. J. Collins, 88 Bulla Rd., Strathmore.
 3ZG—H. W. Lelliott, 267 McKinnon Rd., McKinnon.
 3ABF—A. Robinson, 1 Joffre St., Croydon.
 3AET—C. E. Tilley, Old Reservoir Rd., Belgrave.
 3AFK—J. G. Foster, 29 Leonard St., Frankston.
 3AJE—H. W. Ellis, 465 Hoddle St., Clifton Hill.
 3AJJ—J. Ireland, 11 Talaskia Rd., Upper Fern-tree Gully.
 3AJQ—J. R. Kilng, Lot 8, Cassia Gr., Frankston.
 3ALD—L. B. Robinson, 9 Reid St., Murrumbena.
 3ALG—F. A. Freeman, 14 Riversdale Rd., Chillewell, Geelong.
 3AVE—E. V. Avenell, 44 Burrind Rd., Caulfield.
 3ZBT—K. A. Thomson, 444 Whitehorse Rd., Mitcham.
- Queensland**
 4JA—J. A. Marston, 39 Norman St., Deagon.
- South Australia**
 5AL—K. S. Harris, 38 King William Road, Goodwood.
 5DZ—J. A. Casey, Bowman St., Crystal Brook.
 5EH—J. E. Hawke, Bute.
 5QN—C. J. Othen, 45 Pekina St., Eden Hills.
 5VJ—J. J. Marten, Lot 5, Keynes Ave., Warradale.
- Western Australia**
 6HK—D. E. Graham, 103 Edenborough St., Mt. Hawthorn.

- 6RH—R. A. Hallamore, 14 Curlew Rd., Dalkeith.
 6TR—T. W. Reed, 172 Shepparton Rd., Victoria Park.
 6WU—R. Jaeschke, Moora.
- Tasmania**
 7AK—S. W. Carter, 10 Reid St., Kings Meadows, Launceston.

CANCELLED CALL SIGNS

- VK—**
Australian Capital Territory
 1JG—N. S. Hill, New VK2JG.
 1UZ—B. B. Browne.
- New South Wales**
 2ZJ—H. M. Temby, Transferred to South Aus.
 2AFJ—J. D. Ewing.
 2AFJ—J. H. Fraser.
 2ANO—N. Thuge.
 2AWT—N. J. G. Watling.
 2ZAI—K. L. King, Now VK2ABK.
 2ZBH—W. O. Hill, Now VK2AVH.
- Victoria**
 3UV—N. Serpell.
 3ABU—W. A. Brownbill.
 3ABW—R. J. Heighway.
 3AGU—H. Chapman.
- Queensland**
 4ZAB—C. T. Amore, Now VK4TA.
- South Australia**
 5JD—J. M. Coulter.
 5LZ—A. S. W. Taylor, Transferred to Victoria.
 5WY—J. F. Westley, Transferred to Tasmania.
- Tasmania**
 7AM—L. G. Arnold.

PERMITS GRANTED FOR TELEVISION EXPERIMENTS

- VK—**
New South Wales
 2EN/T—E. C. Hulme, 34 Gnarbo Ave., Carrs Park.
 2VC/T—W. B. V. Cahill, 116 Flora St., Sutherland.
 2AHP/T—H. J. B. Pickett, 12 Crane St., Homebush.
- Victoria**
 3TU/T—J. F. Irvine, 258 Balwyn Rd., North Balwyn.

AN OPEN LETTER

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to date and at least will be a means of creating some interest and to start a new line of thought on V.H.F. Of course there is nothing to prevent the same ideas being applied to 56 mcs—get there easier anyway.

Now all stand back whilst we rush for those crystals.—SEF.

WESTERN AUSTRALIA

The Fox Hunt held on Sat., 4th May, was a great success. The roll up was in excess of the numbers expected, owing to another function which clashed with the Hunt, but more of that anon. Frank ECC was the fox, and a foxy fox he was. When anybody got near off would go the audio tone, as 6ZAV, who was first on the scene (time 25 mins.), found out. He thought his diode detector had gone on the blink at the crucial moment, but all wash well. Supper at Frank's QTH concluded the very fine evening.

Now about this other function. A Kitchen Tea for Wally 6ZAA and his YL on 11th May. Wally changed the YL to XYL. All the best of luck from the V.H.F. Group, Wally. May all your troubles be little ones and may we see more of you on the air from now on.

The V.H.F. Group monthly meeting was held at Dennis 6AW's QTH on Sat. evening, 11th

May. Attendance again was very good. After the usual business, etc., was disposed of, we were treated to a fine lecture on Transistors by P.G. Engineer, Mr. John Sanders, concluding with tests of a stage transistor amplifier—in all a good show.

With the allocation of the 56 Mc. band to L.A.O.C.P.s, it is hoped that contacts will eventuate with the East.

After several crossband contacts, 56-144 Mc., Don 6ZAV worked Tom 6ZAF to make what we think the first 2 56 Mc. QSO. Duplex working has a lot to recommend it. Rolu 6ZAG also worked his first full contact with 6ZAV on 56 Mc. One of Rolu's remarks being, "I've been waiting a long time for this."—6ZAV.

TASMANIA

Activity on 2 Mx in the Northern Zone has been very low with a succession of low pressure centres and rain almost every day for two weeks, but with a rising barometer, hope was held for more DX contacts. On Sunday, 5/5/57, 7LZ was contacted on 40 Mx by VKIs who held the 2 Mx band was open from VKI-VKI. Skeds were arranged, but no signals could be heard. An early start was made next evening (6/5/57) and TPF was tuning on apparently dead band, when, to his surprise, 5BC was heard at RST 569 calling CQ, but no QSO resulted. This was at 1943 hours with the distance 618 miles. How the signal was propagated is a mystery, as during earlier openings with stations over 400 miles and 89, 5BC was inaudible. At 2000 hours, 3ALZ was worked by 7LZ, who heard 5BC's signal but did not identify, but signals were only fair.

TPF QRT at 2100 hours, but 7LZ stayed on to work four new stations—3ZDI, 3ZDX, 3ATW and 3EF, as well as 3ALZ, 3RK, 5ZLO, 3AEL. QSOs were made harder by QSB. 7LZ QRT at 2400 hours.

TPF worked 3ALZ on c.w. on 7th and 9th May. A watch was kept on conditions and with the barometer up to 30.6 ins., 7LZ and TPF worked 3ALZ on c.w. with signals later strong enough for phone, on 4th June. TPF worked 3RK on c.w. as well. 3ALZ was again worked on 5th and 6th June, signals on the 6th being weaker with QSB.

It appears that if conditions are watched, QSOs with VKI may be an all-year-round affair.—TPF.

JUNE 1957 CALL BOOK

The new issue of the Australian Radio Amateur Call Book is now available. Make certain you purchase your copy early as only a limited supply has been printed.

D.X.C.C. LISTING

Listed below are the highest twelve members in each section. New members and those whose totals have been amended will also be shown.

PHONE

Call	No. Rics	Call	No. Rics
VK4HR	12 192	VK3JD	1 153
VK4B	6 232	VK4KQ	2 153
VK3ATN	26 187	VK6KW	4 150
VK6RU	2 184	VK4RW	23 147
VK3BZ	3 176	VK3LN	11 141
VK3SE	10 165	VK3AW	14 160

C.W.

Call	No. Rics	Call	No. Rics
VK4FJ	29 224	VK3KB	10 200
VK3BZ	6 222	VK3BY	45 193
VK4HR	8 219	VK3ZD	2 183
VK3FH	15 215	VK4EL	9 175
VK3XU	48 213	VK4RW	18 170
VK3CX	26 206	VK3RX	23 169

Amendments

VK3JT — 34 114

OPEN

Call	No. Rics	Call	No. Rics
VK3ACX	6 233	VK3HG	3 201
VK4HR	7 233	VK3JE	12 198
VK4FJ	32 232	VK3NS	16 195
VK3BZ	4 231	VK3RW	2 183
VK3XU	61 221	VK6KW	13 171
VK3RU	8 216	VK3DI	2 170

Amendments

VK3JT — 63 120

YL CORNER

BY PHYL MONCUR*

WHAT IS A HAM?

A Ham is one of a species of strange characters who live, eat, breathe and talk nothing but Ham. He has a language all his own which normal people do not understand, one has to be tainted with his disease to do so. Under the laws of this language his wife and children are poetically named XYL and hard-cores.

Life with a Radio Ham is a series of wires and knobs. Long bits of wire trailing across the floor to trip you. Thick bits of wire that come through the window from somewhere up on the roof and continually prevent you from closing the window on cold and windy days. Rusty bits of wire, known as guys, that attempt to decapitate you whenever you walk in the garden, short bits of wire that get stuck in your vacuum cleaner. Twin lead, co-ax, just clacky names for other scary wires that trail the side of the house where it would be so nice to grow creepers. The chum who conceived the idea of calling it wire-less must have been a rare one.

And knobs. Knobs on everything. But knobs that only he, the exalted Ham, can turn, and never meant to amuse the small harmonic for whom they always seem to have so much fascination.

His Radio friends, he rarely has any other sort, are all types similar to himself, vague mysterious creatures, one is never quite sure whether they are terribly clever or terribly dumb.

Generally untidy in appearance, he has little interest in clothes, which are only necessary because they have pockets, and pockets are meant to be crammed full with wire, solder, nuts, bolts, resistors, condensers, pliers and side cutters till they burst or tear. Food also has little appeal, although he's always feeding somebody. Usually a sign of a Ham is a ham, other. His favourite dish—the parabolic dish. The only drive he is interested in on a Sunday afternoon is grid drive: the only scenery, an elevated location and a multiple element beam.

His musical appreciation appears to be exceedingly limited and extends only to the appreciation of what is generally known as "tone", to which he seems to be able to listen for periods of very great length. His XYL on the other hand usually has, if any, a very low appreciation of the said "tone".

All Hams have one thing in common, they all have a QTH, a queer turn of a home in which one section is set aside and reverently termed the "shack". This may be in the bedroom, or at one end of the living room, or the end of the bench in the kitchen or even permanently enhancing one end of the kitchen table. In some of the more well-to-do Hams the shack is sometimes a room all to himself in which he keeps his strange collection, this is usually the spare bedroom, and in these cases one finds junior sleeping on the back verandah. His Radio friends, however, are the family before junior. And in some really exclusive families he has a little old tin shed somewhere in the back yard, or, fortune favours the Ham, he has a shack in the XYL's family. His shack is the most holy of holies, a sanctum in which the XYL is rarely allowed to intrude. The dusting or cleaning up of which is strictly prohibited.

In his shack every Ham has a de-vice, which appears to have a multitude of uses, but is never wanted until it has been borrowed by some other Ham.

A Ham is one who at some date—a week, or even a fortnight—after his wife's birthday, comes home beaming with a very large bunch of flowers and an equally large box of chocolates, plus two sets of pictures and proudly places them before you. He's remembered your birthday and on the right day, too. You smile to yourself and forgive him all until about 7.30 p.m. when you see he's come for the pictures and another one of his queer species rings him to tell him about a sked he's had with some rare DX. He reminds him to be in on it. So he suggests you ask Mrs. So-and-so next door to go to the pictures with you and tells you to have a good night and enjoy yourself. Oh well—that is a Ham!

* 235 Union Road, Ascot Vale, Vic.

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VICTORIA

DX ACTIVITY BY VK2QL†

Opinions vary this month as to the band conditions, judging from the comments of our contributors. If any of the gang have been watching in the band for some time, my apologies as I have not been there very much.

NEWS AND NOTES

VPIEE is on 21180 Kc. a.m. around 0300z (4EL).

Christmas Is. notes in a recent issue were somewhat inaccurate. VR3B has never left Fanning Is., nor has he any plans to go to Xmas Is. VR3F, VR3G and VR3H have been heard all giving their QTH as Xmas Is. There appears to be confusion as to whether they are counted as a separate country. VR3F said they are the same as Fanning Is., but I believe a recent "QST" gave separate identification.

CR7LU complains of the time it is taking VK QSLs to reach him. In 1956 he received a batch of cards for 1952 QSOs and that is the last he has received.

EL5A is looking for VK contacts on 14 Mc. phone at 0700z (5WO).

Navassa Is. is in the news again with a proposed expedition in the making for a limited period of 36 hours. The date is unknown (5WO).

The licensed ZK2AB advises 2AIR that the station at present signing ZK-2AB is a "pirate." The licensed station has not been active for some time. His name is Chas., so if you work ZK2AB signing another name, you are out of luck, as you are QSOing the "Joey."

3W8AA has now forwarded a big batch of cards to 2AIR for VK and ZL contacts and Alan has now put these into the Bureau.

ACTIVITIES

3.5 Mc.: Nil reports this month.
7 Mc.: 2AMB: FKAT†, KLP†, FK8AC, BERS-195; CNR3J, FK8AT, DUDXD, FBAG, OD5AF/AM, UOSKAA, TIWVS, ZM, ZEIVJ, ZK2AD, Rod De Balfour, HF3FL, KH8, VR2DA, JA. WIA-LS08: DUWUX/JA.

14 Mc. C.W.: 0AB: KW6CD†, VP8BO†, VP-BCO†, VK0AS†, KH8AIK/KG6†, PY2AJK†, C8EAA†, UJ8AG†, ULTKAD†, KV4AA†, LU-7WV, ZEIVJ, ISIT†, LAIVG†, G3WAA†, KG0ID†, V88AE†, KC4USA†, FK8AL†, CE-3ZO†, VK0CJ†, KC4USK†, 2AMB: UAIKAE†, HH3LD†, EA6G†, VFTYV†, GW†, CZA†, FYTYP†, C8EAG†, LUTEN†, LUSAG†, KC4USA†, VK0CS†, VK0AS†, VK0AB†, F8P8A†, VP8PL†, C8RFD†, KC4USK†, HK8G†, KC4C†, FJ2BE†, BV1US†, HC4MC†, VQ2NA†, VP8AO†, HL3AF†, ZB1, VK0PK, F08AQ, 3W8AA, HK8CH, X44-JU, X44GJ, FMTWV, CN8MX†, VG5GC, SAIL, GQOVN†, VFTYV†, F08AQ†, CR7LU†, VR3B†, HL3AE, VR3G, VR3H, SWO: VESCPC/VOI†, UJ8KAA†, KV4AA†, V8SAD†, UME-3LA†, 3W8AA†, VK0AS†, HIB8†, KP4PD†, UQ2KAB†, 0DB: UMEKAA†, HL3AJ†, BERS-195: CE8E, CPIC/AG, AM, CX3CO, HH3LD, HL3AF, KC4USA, KZLSB, UMEKAA, UNIAE, HL3AF, VK0CJ, VR3B, VQ2AB, VY8SB, ZC-SAL, ZK1BG, Rod De Balfour: VK0AB, ZL-SAB, HH1OT, 457SR, JA. WIA-LS08: LUINE, K9W, LARBE, DL, EL, UAIKAE, SN, HL3AF, WH1WV (QSO HL3AA using 10 watts), HC1LE, ZC3AL, F08AQ.

14 Mc. Phone: 2AMB: FJ2CK†, BHR8†, C8RQ†, C7EAF†, HIB8†, VP8CD†, CX3CO†, VY7WKV/VOI, KC4USK†, ZLSAA, HL3HH, VR2AG, SWO: Z8ANAE†, Y8IMS†, CQVFN†, V88AR†, Z88ST†, V81LO†, VY3BD†, EL2F†, OE, F†, G†, 0DB: JA, LU†, HP†, Rod De Balfour with a large list reports the usual run of Europeans, plus EA, CTIFF, GD2FRV, FRV/FC, ELA, AF2KW, VU2BK.

† Frank T. Hine, 30 Abbotsford Road, Homebush, N.S.W.
* Call signs and prefixes worked.
z—zero time—G.M.T.

457WE, 457YL, DUWIV, VS4UT, HL3AJ, BV IUS, F08AB, ZK1BS, HF3FL, Y8IMS, XE2NF, VP1EK, VP1EE, VY5AY, C070Z, HH1HB, FMTWQ, HKH5V.

21 Mc. C.W.: 0AB: VK† and ZS†. 2AMB: ON†, 03†, SOL: CKKAB†, UACQFG†, VK-0AB†, OAAIU, SAITH, SWO: YN1AA†, 0DB: HH3LD†, DL†, G†, W†.

21 Mc. Phone: 2AMB: G†, W†, GM3EST†, 11AMU†, VK0AB, FK8AT, CR8SP, VS4UT, VQ-5KE, 4EL, OE†, EA†, VP8GQ†, CR8SP†, G† at 1000z, SAITC†, VP1EE†, FUSAD†, VP6ZX†, 3W1AA, SWO: G†, CR8SP†, UAIKAE†, VP6WR†, VP6GT†, CE3DY†, 0DB: G0GFA†, VP4LF†, VP6WR†, KP4ADS†, KP4ADZ†, HH3LD†, VP6EM†, KB8BD†, Rod De Balfour: GD3GMH, CTHS, EA, LARBE, 457YL, VS4UT, HCFPS, ZPSCA, LUJL, VY5AB, XE1BW, VP-1EE, HH3LD, VP4L, VP6EM, SAITG, VK0AB.

22 Mc. C.W.: 0AB: VP8CO†, VK5LC†, VK-6CU†, VK1AMB†, ZS6LR†, ZE3BV†.

22 Mc. Phone: 4J†, W†, KH8†, VR2†, JA†, PY2AES†, PY8K†, LU8MA†, HP8E†, ZS-4FB†, ZS5CU†, ZS5CM†, VQ9NS†, SWO: VU-8BK†, CR8SP†, ZB1U†, ZS6LF†, ZS6J†, ZS5NZ†, VS1PE†, 0DB: Rod De Balfour: JA, KH8J, DUJIG, VR3E, 457YL, KC8AF, KM8AX, ZE1J, FK8AC, ZS2OV, ZS4FP, ZS-3NZ, ZS6ZK, ZS6UR, ZS8AT, HK8ER, XE1PY.

QTHs OF INTEREST

HH3LD—Box 596, Port au Prince.

VR3F—QSL via R.S.G.B.

ZC3DA—Cpl. Max Anderson, R.A.A.F. Detachment, Labuan (BERS195).

ZS9P—Norm Eller, Box 35, Francistown (BERS-195).

054DE—Karlsruhe 21, Klarenthal (BERS195).

HS1B—P.O. Box 1038, Bangkok (Rod De Balfour).

R.D. CONTEST

In addition to the points in the scoring table that may be scored by a contestant (see rules "A.R." June, '57), a bonus of 25 points may be added to the score for the first contact with each call area worked on 56 Mc. or above.

VK SCORES FOR THE 1956 "CQ" WORLD-WIDE DX CONTEST

C.W. Section, Single Operator

Contestants whose calls are in bold type receive awards.

Call Sign	Band	Fis.	QSOs	Zen.	C.C. Watts
VK2GW	All	317012	664	66	98 100
2PV	"	105490	336	43	67 "
2ADE	"	101260	287	53	69 "
5JT	"	17694	130	24	22 "
5WT	"	10150	117	13	16 "
6RU	"	205209	468	60	91 "
7WA	"	3822	51	16	10 "
2JX	28	16480	140	16	24 "
1ALR	14	10440	120	15	14 "
2AIR	"	42245	209	23	43 "
3AMR	"	61410	309	25	44 "
3CX	"	23077	172	18	29 "
3HL	"	4256	54	13	15 "
7UW	"	47750	323	18	32 "
7CH	"	30448	242	17	27 "
3XB	7	3495	81	8	7 "

Phone Section, Single Operator

All Contestants listed received awards.

Call Sign	Band	Fis.	QSOs	Zen.	C.C. Watts
VK2ADE	All	30992	110	40	64 100
5WO	"	10191	83	16	27 "
6RU	"	28884	115	37	50 "
4HD	28	14443	95	19	32 "
4XJ	27	459	17	5	4 100
3HL	21	1872	34	12	14 36
4WF	"	15246	84	24	42 100
5AB	"	4838	50	17	24 "
3AMR	14	6156	57	16	24 "

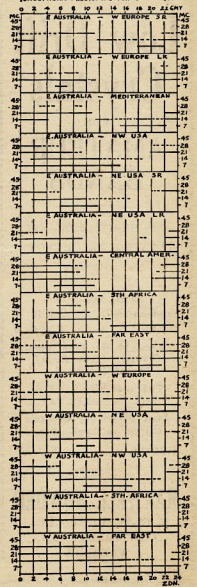
QSLs RECEIVED

2AMB: VP3AD, VK1RW (Cocos Is.), CE1HV, V7AAA, HIB8. SWO: FLAAB, JZ2PB, BERS-195: HASBW, LZ1KEP, OAAIU, TI2WR, UA-5D, HB5WF, VK3AJ (Cocos Is.), VQ3KP, VR1B, ZC3DA, ZSP, 854DE, Rod De Balfour: VR2DA, VK0AB, TI2OE, GD3GMH.

My thanks for their assistance is to 0AB who is gradually approaching his DXCC with 84 countries up. Chas. just missed out from Macquarie Is. and has no intention of it happening again. 2AMB, 4EL who still gets good results from his two fixed 81K's, 4XJ who finds 28 Mc. falling off except for ZS, 9DB who finds the bands quite OK when he can get to them. Rod De Balfour found the bands to his liking. Dave Jenkin (WIA-LS08), who for some reason best known to himself, gets up at times round 1.30 a.m. to look at the moon and has a look at the bands at the same time, and last but not in anyway least, the man who received 60 QSLs for the month—BERS195.

I hope that by the time you receive this copy, I may be on the band a little more and get some notes over the air.

IONOSPHERIC PREDICTIONS FOR JULY 1957



S.W.L. SECTION*

Firstly, I must apologise for the non-appearance of these notes last month. A bout of 'flu and the arrival of the first harmonic, a little girl, certainly put me out of my stride. (Was it the 'flu or celebrations, proud Papa? Ed.) However, things have now almost returned to normal and I can begin to breathe again. As I've not had time to interview any prospective 'S.w.l.'s of the Month, I'll take this opportunity to let you get to know a little about the water for your own wine, being bitten by the bug in 1945 my rx's have ranged from a single valve home-built regen. to a 10-valve AM300 at present in use. During 3 years in the Army Signal Corps, I was able to use many different types of rx's. My antenna at the moment is a simple 20 mx dipole whilst the beam is on the ground undergoing modifications, which will probably result in a WJXK.

My main interest in s.w.l'ing centres on 14 Mc. where a total of about 115 countries have been logged on phone. Only 15 of them have been verified as yet. Much time is also spent in experimenting with various types of antennae. The only awards so far held are the S.W.L. 100 Certificate issued by the Victorian Division of the Institute, first in the open section of a contest held by the S.w.l. Group during 1955 and first in the Amateur section of the same contest. My sporting activities consist of playing Australian Rules football, running and tennis. Other interests which keep me busy include stamp collecting, music, reading, taking photographs of radio gear, acting as treasurer for Northcote Football Club Social Committee, Secretary of Vic. Div. S.w.l. Group, looking after a persian kitten and now the baby. During the day I work in a statistical branch of Commonwealth Government department. For the benefit of any Victorian who may read this, I support the North Melbourne in the V.F.L. and Northcote in the V.F.A. of course. My age? I sometimes feel about 40, but I was 24 years last month. After this, possibly boring discourse, we'll come to the latest news.

VICTORIA

May Group Meeting. At this meeting of the Group we were presented with a talk by Mr. Sid Clarke, J.A.S.C., on the subject of rx's. Sid who is somewhat of a specialist in this line provided the members with a most enjoyable and interesting evening. His talk, which covered a very wide range of the various phases of rx's, was undoubtedly well timed, as at the June meeting a discussion will be held to determine the nature of the rx we plan to build as a Group project. We thank you sincerely for your efforts on our behalf, Sid.

Visit to D.C.A., Essendon.—On Sunday, 26th May, 22 members of the Institute met at the Dept. of Civil Aviation air traffic control centre at Essendon Airport. The weather was fine and the afternoon proved to be one of the best ever arranged by a Vic. Div. body. Dividing into three parties, members inspected the air traffic control room, aeradio and technical

sections and the control tower. We were treated to first hand demonstrations of talking to aircraft in flight by Eric Trebilcock, well known as EERS195, and also as an Institute member, control of aircraft landing and taking off by the boys in the control tower, who, incidentally, included an ex-VK3, and also saw much of the transmitting, receiving, test, and beam equipment. Our thanks are extended to all the officers of D.C.A. who made our visit really worth while.

Future Programmes.—July: A talk by Mr. K. Dalziel, a member of several of the earliest Australian National Antarctic Research Expeditions, about his experiences down South. August: Tentatively arranged a film on tx hunts and demonstration of mobile tx and rx gear. Arrangements are also in hand for visits by members to Amateur Station and other places of general interest. Come along to the monthly meetings and hear all about it. Anyone interested, young or old, is welcome. We meet at the rooms, 191 Queen Street, Melbourne, at 8 p.m. on the last Tuesday of each month.

Correspondence.—Robert Tacey, W1A-13051, from Newport, has written me a letter detailing his latest listening activities. His present project consists of getting his converter for 80 through to 5 mx into operation. He has a 5-valve rx which he has modified and added handspring to as his latest rx. Previously Robert was using a 3-valve regen. on 20, 40, and 80 mx with a doublet antenna. Hope you get everything going OK Robert and that we will see you at the next meeting.

John McEwen, W1A-L3040, has also put pen to paper. He states that solid study for exams doesn't leave him much time for radio, but still manages a minute at the rx now and then. He now has a Philips No. 4 rx which is much better than the dual wave set he had been using, and now intends to build a converter for 15 and 10 mx. John asks me to tell Geoff Morris that there's another Camberwell football club supporter in the Group. I guess I'd better find another North or Northcote supporter to keep things even).

QUEENSLAND

A letter from Don Bryant in the sunny city of Brisbane provides the following information: A number of the VK4 boys have been getting together to form a club and we hope that as a result s.w.l'ing in Queensland will really begin to progress. Don himself is at present carrying out some modifications to his ART in an effort to squeeze a bit more signal into the shack. With a new mast and antenna on the way things should really be looking up.

Among other Brisbane s.w.l's. Don mentions N. Bolton, B. Bischa and P. Hayden. How about letting us hear from us fellows too.

SOUTH AUSTRALIA

John Campbell, W1A-L5011, lets us into the secrets from the land of parks, churches and a river with a plug-hole. In the VK3 Group's current listening contest on 14 Mc. some colossal scores are being amassed and practically every member is listening as hard as he can. Certificates are to be awarded for the 1st, 2nd, and 3rd places.

On 24th June the Group visited the new SDN broadcast studios at North Adelaide and then

proceeded to the tx installation at Dry Creek, about 7 miles north of the city. This visit was arranged through the assistance of Warwick 5FS, who really showed off the 'new studios.' (Wonder if he has his own desk to put his feet up on yet?)

The July meeting of the VK3 Group will be held at the Methodist Mission on the third Monday of the month at 8 p.m.

GUESS WHO?

And now for the scoop of the month! From VK9 we hear there are such creatures as s.w.l's. Up until now I think they must have all been hiding in the jungle. There are three of the boys up there and we hope to hear from each of them soon. My informant goes under the name of Bob Clark and is using an ART rx with a dipole antenna 40 ft. high. Bob hopes to soon have purchased an Eddystone 760 rx and says he'll really hear some DX then. Not much listening has been done lately as Bob has been doing a lot of study for the A.O.C.P. including plenty of Morse practice. The boys up there are really keen to get going in the next contest to come along, so it looks as if there'll be plenty of competition from the VK9 area.



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FEDERAL, QSL, and DIVISIONAL NOTES

FEDERAL

NEW FEDERAL COUNCILLOR IN VK9

Following the transfer of Doug Lloyd, VK9CJ, to VK9B, Page and N. J. Gurney, Division has appointed Russ Coleston, VK9KX, to the position of Federal Councillor.

The VK9 Division and the Institute generally owes much to the work of Doug VK9CQ, for he took a very active part in affairs during the early days of that Division's formation. His untimely death was a sad loss, and his work as Federal Councillor most productive. It is hoped that he will find time to continue in some phase of the Institute's activities.

In Russ, VK9KX, VK9B has found a worthy successor and best wishes go to him in assuming his new position.

SPECIAL CALL FOR QSL CARDS

It has been brought to the notice of Federal Executive that the London Members' Luncheon Club of the R.S.G.B. is most interested in obtaining the QSL cards of those members of other societies that they have entertained at their luncheons.

It is known that a number of VK members have availed themselves of the cordial invitation of this club, and Federal Executive suggests that in return they forward to the Secretary, Mr. Frank Fletcher, GPOX, of 11a Jickham Road, Ripley, Middlesex, one of their cards. Let's make sure that VK is represented 100 per cent.

FURTHER LIST OF SUCCESSFUL AMATEUR CANDIDATES

- A. Parker, Mt. Beauty, Victoria.
- H. E. A. Gehrke, 52 Norma St., Mile End, S.A.
- A. E. A. Street, Bellevue, W.A.
- C. F. Jaensch, Moore, W.A.
- I. H. Clinch, Moora, W.A.

FED. CONTEST COMMITTEE

Advance copy of the results of the 1966 "CQ" DX Contest was received from the Contest Chairman, Frank Anzalone, WIWY, early this month. These are published elsewhere in this issue. He also points out that the dates for the 1967 Contest have been delayed by a fortnight to make them as:—

Phone—October 26-27.

Phone—November 12-13.

This has been done to leave a fortnight between the VK-ZL Contest and the "CQ" one.

The congratulations of the Committee, go to those who represented Australia in this Contest.

Please study the VK-ZL Rules published in this issue and make them as widely known as possible. Nearly 100 Societies and most of the Amateur publications have been already circularised and have promised their support. You will note that the rules are based on the new R.S.G.B. Contest Rules—that fact should be the selling point.

Regarding certificates awarded for ANY WVA, A Contest, the Contest Manager, Mr. Rex Richards, VK9DQ, requests that all stations posted and there should be none outstanding. A very meritorious effort on his part.

G. M. Bowen, VK9XU, Chairman.

FEDERAL QSL BUREAU

Writer has been on vacation during April and May, hence no notes appeared in this issue. Portion of the period was spent at Marysville enjoying the mountain air and feasting the glorious and colorful autumn tints of the wealth of deciduous trees to be found there. The remainder of the "vacation" was spent in dealing with a mountain of QSL mail which during the past two months has trebled in volume, and wielding the paint brush in the interior of the menage. The big switch was not thrown to the on position for a full month.

The QSL Bureau address of the Maritz is now Box 777, Kuala Lumpur, Malaysia. This bureau will handle cards for VK9, Z, ZC3 and ZC3S. The QSL Manager is VS2DO.

New certificate data comes thick and fast. The latest is from the Kroonstad Radio Club which has been awarded a 200 watt portable and must QSO two stations in Kroonstad. No confirmations need be sent when applying as Kroonstad QSL will be checked, but before the award is issued the applicant station's

QSL cards must have been received by the Kroonstad Amateurs he has contacted. Costs are three I.R.C. and application must be directed to the Secretary, Bill Kroon, VK9JH, Kroonstad, South Africa. Active Kroonstad stations are ZS4AA, BH, BN, CN, HN, IO, JB, JC, JL, MG, and ND.

The QSL Manager of the N.I.L.V.R.A. is C. Loze (ex-FK1LZ) with address as Iordensstraat 23, Haarlem, Netherlands.

The QSL Bureau for VE3 is handled by VE3QE, Les Whetham, 32 Sylvia Crescent, Hamilton, Ontario, Canada.

The Seibu Amateur Radio Club, care Seibu Department Store, Tokorozawa, Toshima, Tokyo, Japan, advise that JA1AIG is their club station and that they have 100 members. They state that about ninety per cent of JA Hams cannot use 20, 15 and 10 metre bands because they have only a second class license.

MP4BCD, John Hancock, Bahrain, is a Victorian hailing from Box Hill, Vic. John is on the look out for VK stations on 14 Mc., both c.w. and phone, around midnight E.S.T.

The U.S.S.R. Central Radio Club organised a traditional international c.w. contest on May 4 and 5, 1967. Unfortunately they did not have the foresight to send a copy of the contest details to all stations. The contest was given to the contest in earlier issues of "A.R." They sent the details by surface mail which was not received until the contest was over after the contest was over. The rules state inter alia, that reports should reach Postoffice Box 88, Moscow, U.S.S.R., by May 25. Seems they have a little to learn in the staging of International Contests.

VOID, who was very active in recent contests and who has called many QSL cards, c.w. is Roland Peddie, 11 Vaughan Place, St. Johns, Newfoundland. Roland QSLs every contact and is a regular reader of "A.R."

Also using a Viking with 120 watts and a half wave doubler. Since the last contest his call sign has been changed to VOIBD. He is still seeking VK contacts on 14 Mc. c.w.

Eddie Roberts, who operates VK8AT at Lee, New Guinea, is ex-GKITY and DL2WL. Eddie uses 95 watts to a dipole on 14 Mc. c.w. and QSLs all contacts.

Details are to be handed as to the relationship between VK1WR (Cocos) and VK9AJ of the same location. This set up has caused some confusion. VK1WR is a c.w. station and overseas Hams. The call sign VK1WR was originally issued to R. Widows, and when he was recalled, the call sign was transferred to ex-Lancaster, Shurley. Howard, who did sign was changed to VK9AJ. OM Widows left his log book behind to enable Les, VK9AJ, to call him, all apply.

Also using a Viking with 120 watts and a half wave doubler. Since the last contest his call sign has been changed to VOIBD. He is still seeking VK contacts on 14 Mc. c.w.

As a contribution from Hams of Mocambique for the 50th anniversary of the town of Beira, the L.E.M.C.—official organ of CRHs—will award a certificate in contest in Beira, Portugal, with not less than two (2) Hams at Beira during the month of August, 1967. Contacts must be made on 14 Mc. c.w. and phone, 100 metres. The Beira Hams' stations with which contacts may be established are as follows: CR1BN, CR1P, TCY, TD1, TDS, TDQ, TT, TLU.

The listeners' log must show that twenty (20) contacts from Beira stations are also entitled to a certificate. QSLs must be addressed to CR1BN, P.O. Box 87, Beira, Portugal, or Africa, and must reach Beira not later than October 31, accompanied by two I.R.C.s.

—Ray Jones, VK9RJ, Manager.

NEW SOUTH WALES

HUNTER BRANCH

The May meeting of the Hunter Branch was held at the University of Technology, Tighes Hill. Vice-President, Stewart Fairburn, was in the chair as President, Lionel Jones, was in VK1 to attend a Civil Defence School.

Activity on the bands has been quiet of late but with 10 metres opening up a mass migration to the 10 metre band is expected. Broadcast on 40 mc has met with mixed reception and it appears that 2CS will have to conduct a contest on 40 mc. The forecast, Ernie 2ZF is bowling over the DX on 40 mc. after an absence of seven years Ernie has lost none of his touch. However, he has some local competition from Joe 2ANL who is in the fortu-

ate position of being able to operate in the forenoon during the week with no QRM and the band at its peak.

Visitors to the district were Dave Tursie, Bill 2A7J, Noble who had himself at the mercy of Bill 2ZL at Fennell's Bay Railway Yards, from there Bill went to the other side of the island to see 2WV, 2D who is sojourning with caravan and Type 3 Mk. 2. Another visitor was Rod 2ACU; he called on Jim 2ZC and Bill 2XZ naturally!

News of the VK4 Convention, the VK4 Gold Coast visiting Hams en route and finished up testing 897s with Mayor of Church Point—2ACQ, Treasurer, Bill 2AFA has private holidays on Gold Coast and expects to attend the VK4 Convention. Good to hear that Varley's (2SF) XYL has recovered from his illness; Varley is again active on 7 and 14 Mc. Harold 2AHA kept busy mothering his mobile marine, but puts up now and again on 7 Mc. mobile. Norm 2AMA, who recently made a comeback, is taking things easy so far with only local contacts on 20 mc. We hear that Tom 2PQ has given the game away due to high noise level; wait till he hears from 2FP of 30 mc being open—he'll be back! Ron 2AAI also seems to have gone QRT since being appointed manager of a city of the local shop. Syd Daniels has been busy photographing the trip and 2ASJ's gear for W6AL. Some returned from three weeks holiday at the lake is gentleman Jack 2AQA. Bill 2AFA has been busy painting but has made time to work some choice DX including a KV4. Ron 2ASJ will again be reading mail and doing repairs to a car by Milton Hughes. Congrats to John 2VQ and XYL on birth of daughter; the 2AOB's are the next couple to watch. Leo 2QB is re-bubbling his modulator into a smaller cabinet.

The next meeting of the Hunter Branch will be held at the University of Technology on 12th July. Also a meeting of the branch on the fourth Wednesday of each month at Bill 2XT's place of business.

SOUTH WESTERN ZONE

Herb 2GD at Albany has an f.b. tower mounted on top of the shack; waiting on help to get the tower up. Art 2EW has been amongst the DX on 20; must be the new mod. trans. or is it the AR80? Athol 2VA has been heard occasionally on 20 and 40. Bert 2AEM active on most bands, is using 2MB's portable while re-building gear. Noel 2OJ active on 20 once a week with WACC. Noel had the misfortune to have his good son, locally, Pleas, accept the condolences from all in the zone, Noel, on your sad loss.

Barry Dooland has received notice that he has obtained the L.A.O.C.P.; awaiting call, comets Barry, hope to hear you in the soon. Jim 2ANQ has lately been married and I hear will soon be leaving VK2 for VK3. Don 2BZ active on all bands, has a new mobile 20 watts. Also has a new quad yagi on 144, so has been blowing the cobwebs off the 144 gear. Don also had a mishap at Easter, his radar failed while mobile and, well, colliding with a cow, I hear. Tut, tut, and Don is a teetotaler.

Your scribe and Stan Abbey spent the weekend of 25th and 26th at Forbes with Hugo 2WZ. Hugo was in the mood for a mobile trip. We were well looked after by Hugo and wife, Sean, even though Hugo's daughter, Helen, had a cold. Hugo had an appendix operation the day before. Hugo was in the mood for a mobile trip. We were well looked after by Hugo and wife, Sean, even though Hugo's daughter, Helen, had a cold. Hugo had an appendix operation the day before.

News from the Griffith area is that the club had a visit from Noel 2AQH who gave a very interesting talk on the R.S.G.B. and discussed the program of commercial interference in the Ham bands. John Smith (Z call) has now passed the c.w. and is awaiting full call, congrats. John 2BZ has a new mobile and a new mobile. Brian 2AVJ has left Griffith and is now in Sydney. We of the zone are sorry to see you John, but I know your move is to your advantage. All the best.

Next month I will have a full report on the preliminary meeting to be held on 8th June at Coolamon—2AJO.

VICTORIA

Over the years we have been privileged to hear some very fine lectures at our monthly meetings, and that given at the meeting on the 4th June was no exception. It was a most source of wonder to find the number of people who are always prepared to give of their time and talents to the Institute in this way. The

On this occasion the speaker was Alec Brown who was VK1DA during 1956 and his subject, "The Wild Life of the Antarctic as encountered during his tour of duty as a Radio Officer on Macquarie Island."

Before commencing the lecture proper, the speaker gave some very interesting facts about the island and its present role in the scientific studies of such things as weather, cosmic rays, ionospheric predictions and geomagnetism. Having dispensed with these preliminaries he then enthralled us with some really magnificent slides of the island and its wild life, and his descriptions and commentary of the various scenes left nothing to be desired. You really lived the life on the island through the speaker without the obvious discomforts.

It had been previously advised that the lecture was to be of a general nature and a number of the members took the opportunity to bring along the XYL and harmonics. As a result the attendance was about 75.

Apart from the members' families and the speaker, the only visitor was Mr. H. Larson (VK4WJ) who was duly welcomed.

Many thanks are due once again to a very able lecturer.

You will note from your membership card that the next meeting will be held at the same place (Radio Theatre, Royal Melbourne Technical College) on 3rd July when Squadron-Leader While, of the Ground-Air Section of the R.A.A.F., is the lecturer. His lecture will cover ground to air communications and other angles of R.A.A.F. radio work and will be illustrated with films.

As is usual on meeting nights, the stalwarts who manage the affairs of the inwards and outwards QSL Bureaux had things going at full blast and were attracting plenty of customers. The June 1957 edition of the "Call

At report time, David 3ADW informed the meeting that double sideband reduced carrier A3(B) type emission is now permissible. Len 3LN gave notice of Fox and Transmitter Hunts, and Ian Hunt, of the S.w.I. Group, reported on the activities of these members. The YLs had nothing to say for themselves though, and only seem to appear in the YL Corner of the mag. What about it girls?

The President brought to notice that Mrs. May, our Administrative Secretary, has, for some weeks, been acting as "Scribe" for the meetings of the Institute. In the absence of a permanent appointment of a member to the post, Volunteers were then called for, but, as often is the case when jobs are around, no starters appeared. Indeed, the only person who was asked to be the "other fellow" to make the move. Unfortunately the "willing few" will probably be fewer still in the near future. It is hoped that a majority will stand complacently by, and demand their rewards. It does not seem to be realized that the life of the Institute is dependent on the help of the few who are active, these are its members. If the Institute should fail for the want of these necessities, Hamlyn would be the first to be asked to resign, and then assist where we can. Don't procrastinate—activate, and help to build the Institute on the foundations already laid by the past.

One last thought while on the subject of jobs. Some Hams don't seem to know, or don't want to know, that the Victorian Division conducts Slow Morse Transmissions for Beginners each Sunday night on 3550 Kc. and 146 Mc. between 8.30 and 9 p.m. If you could spare a few minutes during the broadcast time, please have a thought for the beginner and keep clear of the frequencies mentioned. The transmissions only occupy half an hour per week, which is little enough for learners, and it is very disappointing to the sender and the receiver to have a broadcast spoiled by the interference which often occurs. Remember your own beginners days and be tolerant.

New members admitted: Full Members—K. A. Thomson (3ZBT), E. V. Avenall (3AVE), D. H. Goldsworthy (3ZDL); Associate—C. M. Vriens, M. G. Johnston, R. W. Wilkinson, J. E. C. Heaver.

80 METRE TRANSMITTER HUNT

This hunt was held on 12th May and was won by the transmitter! It was hidden by JIE and co. on the north bank of the Yarra half a mile downstream from Burke Road bridge. Fourteen cars started (two non-competitors) and about seventy people had a hilarious afternoon among the willows, the wattles, the boxthorns, and the blackberries. XYLs and harmonicas had time to offer much

Gymnastic efforts, on the fallen wattle trees in the river, discovered the co-ax feed coming under water from a box buried in the same bank that supported the "antenna farm," made

of hundreds of feet of almost invisible wire. SLN's harmonic dug it out half an hour after the 1½ hours time limit had expired.

Join in the fun on the next hunt. Bring the YL, XYL and/or family, plus picnic hamper even if you have no d.f. gear. 2.20 p.m. outside Queen's College, University.

EASTERN ZONE

Sorry chaps there have been no notes over the last two months, especially as our Convention was coming off but I am afraid television took too much of our time. Jack 3AJK, George 3ZCG and s.w.'s Perry and Des made the trip to Geelong for the South Western Zone Convention and came away talking nothing else but hidden tx hunts and fox hunts, so they thoroughly enjoyed themselves. Ian 3AAV visited Adelaide where he and SMT went up to Mt. Lofty on the last V.h.f. Field Day to work VK3 but no luck.

Cliff 3A1T has been working some nice DX on 20 m. Ron 3ZD has been quiet on 2 m lately, but we understand he is building a rig to work 10 m and 15 m. The 10 m band records. Norm 3ANC is now residing at Mirabeau North, so will soon be on again. Joe 3TO has been heard warning his rig up on 15 m. Ron 3ZD has been working some nice DX on 10 m. David 3DY has a very good signal on 2 m. He has had bad luck with his final tube, so at the moment he is using a 6X4. The 6X4 in 3TH is still experimenting with his cubic wave squall on 2 m.

Still looking for a few more chops to come on in the evening 80 m zone hook-up, but only the few regulars have been on, including Graham 3QZ. Hoping all who attended the Eastern Zone Convention held at Moose on 22nd and 23rd will have enjoyed themselves and themselves and had a safe homeward journey.

MIDLANDS ZONE

The inaugural meeting of the recently formed zone was held in the R.S.L. Clubrooms, Castlemaine, on 24th May, 1957, and in attendance were: Col 3FO, Neville SACN, Bill 3FY, Roy 3ND, Marc. 3ZAW, 3APJ from Kyneton, Jim 3SV, Bob 3AIM, Pix 3ARS, Jack and Russ Dempster, and Theo Dredge.

The unofficial appointments of 3FO as President, 3ACN Secretary, 3ND Vice-President, and 3FY Zone Correspondent and Treasurer were confirmed, and the meeting continued on an enthusiastic and vigorous level. All known members in the zone were listed and it was decided that non-members be approached so that the zone can become active, and with the assistance of other country zones, become a force in the Division.

This discussion led, naturally, to the shortcomings of being a country member and the ways and means of overcoming these, with particular accent on disposals equipment. A majority of members were in agreement, and if their words can be translated into deeds, it appears possible that the elusive piece of equipment may reach the shelves of the "U."

A decision to hold the contest hook-up on 49 mhz was made by the QRM 3FO members in the first month at 7.30 p.m. was reached. 3A1M became rockbound on 7120 Kc., this frequency became the sole contender for a starting place amongst the QRM. 3FO becomes control station to call each member in turn, and they simply acknowledge with advice that they have business or other commitments. The station is called upon to make known his business and then it is his turn to come time for rag chewing. In this way, those members in a hurry who have news and views, can unload it and be off without too

The official opening of the zone in the form of a week-end get-together after a short meeting will be held on 31/8/57 in Bendigo, the arrangements being unashamedly dumped in SACN's lap, with some assistance from 3FY and 3UR. Neville having done a good job of the Convention held in Bendigo is expected to surpass the previous effort; but will welcome any ideas to keep the party going, particularly if the present spell of late summer comes to a sticky end. All those who are interested in Radio are invited to attend and further details will be made known at a later date.

After a number of efforts by SACN to conclude the meeting, he finally succeeded and all present adjourned to Roy 3ND's QTH where he and the XYL did a thorough job of entertaining the company.

No personal news is to hand for this first lot of notes, but once your correspondent descends from the heights of 15 and 10 mx with a G4ZU to 80 and 40 with a dipole, he hopes to have some news of interest next month.

GEELONG AMATEUR RADIO CLUB

A most informative evening was given by Mr. G. Woods, well known yachtsman and

boat builder, at our last meeting. The speaker devoted much time to the procedure necessary in rigging "aerials," the types of splicing required and the methods adopted, as well as the raising and lowering of tall masts.

There has been a great deal of activity in the South Western section. John 3AJF is working the Ws on 20 mx. 3ADV is on 15 mx regularly and has become engaged. John 3AGD has experienced some rare DX with t.v. at his QTH in the neighborhood of a text book "Fatherhood in the Nursery" by Harry J. Hays. He has been so easy, 3HF is lost forever to Ham Radio, now that t.v. is here. Alf 3AJF has a daughter, and Chas 3XH has a son. Bill 3AWZ's XYL has the budgerigar craze. Fred 3ALG has had the time of Ed. Blackney and Vic. Clarke. Keith Vines has constructed a handy converter for his car radio. Fred 3ALG has recently refitted the shack and hopes to be on the air soon.

The new syllabus for the ensuing year has been drawn up and the election of officers will take place soon for the club. Our zone hook-up night is Thursday at 8 p.m.—what about dropping in?

QUEENSLAND

Things have been happening this past month and the place has been a hive of activity. I've taken a few peeps "behind the scenes" and even I was surprised!

Our willing horse, Aussie 4TN, has once again put in a great deal of effort into the organisation of the Palm Beach Convention, which was held on 15th, 16th and 17th June at the National Fitness Camp.

Stan 4SA, after a short break, will be starting classes once again in September. Stan's course on "how to get your A.O.C.P." is backed by practical instruction, with, of course, the usual morse class. Stan has already put some sound ideas to Council and when things start to "pan out" the way Stan hopes, quite a few eyebrows are going to shoot up in surprise! So boys, for more news on this subject, watch this column!

Once more comes the subject of clubrooms. Still in the talking stages, fellas, but we are open to suggestions and healthy bequests. Contact the Executive committee.

We also have before us the not-so-little matter of interference on the bands. We've all muttered, "That blank, blank, commercial! Right up on my DX!" This interference is really getting worse. I'm not an old timer yet, but I can remember the days when the interference was bad, but not nearly as objectionable as this. So what about it? Don't wait till it is too late!

One night this week put yourself out and record interfering non-Amateur stations, together with their frequencies, times, dates etc., and send the lot to the Divisional Secretary. We need a concentrated effort from everybody, including associates and the short wave listeners. With enough evidence the W.I.A. will be able to do something about the matter.

One revered gentleman Ham put his W.I.A. car badge on the back bumper of his Mark VIII. The reason being, I believe, was that the back of his car was the usual view presented to most motorists.

At the last general meeting it was decided to negotiate for some 6V6Gs and 6X5GTs. If we are lucky enough to get them the price would be right. However, it will be some time before we know the net result.

Now that winter is supposed to be on the way, Bert 440 will be cranking up VK4WI on 80 mx to give a re-broadcast of W.I.A. news. The scheduled time will be 2000 hours on 3550 Kc. on Sunday nights. The 40 mx hook-up on Sunday mornings is gaining in popularity too. Must be that really smooth station manager. I remember listening to 80 mx five months ago. I think it was the first time.

Maybe I should be a nark and not pass the word around that a full scale W.I.A. controlled emergency will be dumped in your laps whenever you least expect it. I wonder just how many of you fellas know just where that sheet of emergency drill is at present? Right! Boys, knock the dust off that gear and get it going. Incidentally, this time last year a bobby-dazzle of a couple hit the place.

The Short Wave Listeners' Group is once again to be revived and affiliated with the Institute. It is hoped that with added interest the Group will grow and prosper. Also all A.O.C.P. and L.A.O.C.P. holders be gentlemen and kindly acknowledge ANY QSL cards.

At our last meeting John 4PP gave "an up to the minute" lecture on Civil Defence with reference to the Amateur's role. John recently attended (as Qld. delegate) the Civil Defence School at Macedon (Vic.). In the lecture John pointed out that all Amateurs outside target

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